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Original Articles

SIMPLE FRACTURE

SOME POINTS IN ITS DIAGNOSIS AND OPERATIVE TREATMENT *

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I. DIAGNOSIS

The recognition of a complete fracture of a long bone of a limb is usually so easy as to be within the scope of any one who knows that there is a bone in the limb. The injury presents two signs, which are readily recognized and which in the systematic presentation of the means of diagnosis have obtained much prominence and are habitually given as the positive signs of fracture, namely, abnormal mobility and crepitus. The rule is precise: If abnormal mobility and crepitus can be found, a fracture exists. The mind, perhaps unconsciously, is prone to go further and to assume that if abnormal mobility and crepitus can not be found a fracture does not exist. And unfortunately, while in a large proportion of the cases of fracture in which these two signs are found the diagnosis can be readily made without their aid, in most of those in which the diagnosis is difficult or obscure these two signs are absent or are not to be obtained without manipulations which are harmful to the patient. Thus, in fractures of the small bones and of the spongy ends of the long bones, and in one of two parallel and associated bones, and even in fractures of the shaft of a long bone without displacement, both of these signs are frequently unobtainable. The fragments are too small or too deeply placed to be respectively grasped and moved on each other, or the mind remains in doubt whether a recognized mobility is abnormal and at a point of fracture or is normal and within a closely adjoining joint.

In many of these obscure or doubtful cases it is important that the positive or probable existence of a fracture should be promptly recognized, either to avoid further manipulation, and especially those excessive manipulations which may easily be so harmful and to which we are prone to resort when the patient is anesthetized, or in order that proper protection may at once be established against the harm which may result in such varied forms from the lack of support of the fragments or of enforced rest of the adjoining parts.

In many of these cases it is sufficient to establish the probability of the existence of a fracture. We do not need to take counsel of perfection. We do not need to know all the details, and we have the right to seek only for those the knowledge of which can be made useful in our treatment. We can rest on our knowledge of the type of fracture at the part concerned. It is understood that in this I have in mind mainly fractures near joints and possibly involving joints, and not those of portions of the articular end of a bone, in some of which an exceptional displacement of the fragment is a detail which it is important to recognize and correct.

This probability of the existence of a fracture—a probability which in most cases is a practical certainty—can be established by a systematic search for pain—pain on local pressure from without, pain on pressure along the long axis of the bone, and pain when the patient seeks to use the affected bone against opposition and thereby produces a cross-strain.

The search for pain on local pressure is best made with the tip of the finger or the rubber end of a lead pencil. Thus, in a Colles fracture a well-defined line of sensitiveness can be traced along the radial side and across the dorsum of the forearm just above the wrist; in fracture at the base of the neck of the femur, pain is found on pressure behind or in front just inside the great trochanter; in fracture of the surgical neck of the humerus, by pressure in front or on the outer side; in fracture of the external condyle of the humerus, by pressure on the supracondylar ridge, a little above the epicondyle, and in fracture of the shaft of a long bone, by pressure at the corresponding point on the most accessible side. This method is, indeed, our only means, except the *x*-rays, of recognizing fracture of the carpal scaphoid; that is, by point-pressure in the hollow between the extensor tendons of the thumb at the wrist, the "anatomic snuffbox."

A necessary precaution to be taken is carefully to support the limb so that the pressure, even at some distance from the line of fracture, shall not move the fragments on one another. Another obvious precaution, not often required, is to avoid mistaking the sensitiveness of a bruise for that of a fracture.

Pressure against the ends of a bone in the direction of its long axis causes pain when the bone is completely broken across, but may fail to do so when the fracture separates only a portion of the bone, such as a condyle. Thus, pressure upward against the sole of the foot will cause pain when there is a fracture of the shaft of the tibia, but not often in a case of Pott's fracture, and pressure upward at the elbow will cause pain in a fracture of the surgical neck of the humerus, but not always in a fracture of the external condyle. This method is a ready means of recognizing those obscure fractures at the upper end of the humerus in very fat people or when much swelling is present, and in fracture of a metacarpal bone, and in a Colles fracture.

An important exception is fracture of the neck of the femur; in that fracture forcible pressure of the limb upward often fails to cause pain.

* Read at a meeting of the Medical Society of the State of New York, Albany, Jan. 27, 1909.

A pure example of the third method can be found in fracture of the ulna, the radius remaining unbroken; the patient should be asked to extend the elbow in pressing against a fixed object. Another is to have the patient clench the hand forcibly when the internal epicondyle of the humerus is broken; the flexor muscles, being attached in part to the fragment, tend to displace it and thus cause pain. The same effort will also cause local pain in a Colles fracture by pressing the fragments together, as in the second method.

Other movements, varying with the part broken, such as voluntary abduction of the arm in fracture of a condyle of the humerus, or the attempt to lift the foot from the bed in fracture of the leg, will cause diagnostic local pain in various ways, and one single maneuver, namely, pressure upward against the ball of the foot while the patient resists, will often suffice to exclude in a moment fracture of the thigh, leg and foot. If this causes no pain it can confidently be assumed that no bone of the foot is broken and that the femur and tibia are not broken across. As a ready means of gaining information promptly and of avoiding mistakes this methodical search for pain, with the correlative reduction in the reliance on crepitus and abnormal mobility, seems to me to deserve more general recognition and use than it now has.

II. OPERATIVE TREATMENT

Resort to open operation in the treatment of simple fracture, in order to effect a better adjustment of the fragments and to maintain it by suture or other means of direct fixation, has of late been somewhat increasingly practiced and recommended. This is probably to be deemed rather a part of the general increase of operative procedure which has been so marked in the last two decades than the expression of an actual need in the treatment of fractures. There are so many personal influences constantly furthering resort to operation that there is no danger that the interests of our patients will be neglected on that side, and a word of caution, a suggestion that full and deliberate consideration should be given to the reasons against such interference as well as to those in its favor, may be timely.

The old standard—promptness, safety, efficiency—the injunction that our work should be done *cito, tuto, jucunde*—is still to be met, and met not only actually, but also relatively to the results obtained in other ways.

The reason advanced in favor of the general or extensive adoption of open operation in simple fracture of the shaft of a long bone is that it assures an accurate adjustment of the fragments and its maintenance by sutures, and that in this way causes of failure of union and the drawbacks incident to the frequent permanent displacements left by other methods are avoided.

Against this claim several objections may properly be urged. Accurate adjustment of the fragments is of no great value unless it can be maintained, and its maintenance by suture or other direct fixation is, at the best, uncertain. A suture, at the most, is a protection only against lateral displacement and overriding, not against angular displacement, and only for a short time. The normal rarefying process in the bone, which must precede repair, promptly changes the adjoining ends of the fragments into soft tissue and thus weakens or destroys the grip of the suture, and the fragments again become movable on each other, although, of course, to a less degree, because they are partly supported by the condensed tissues about them.

The more ardently the surgeon tries to obtain a good fixation, moreover, the more closely he adjusts the fragments and the more tightly he ties the suture, by just so much does he add to the probability of a total defeat of his efforts, for he establishes at the fracture conditions of leverage which go far to ensure the immediate breaking of the suture by some one of those slight twists which can not fail to be given to the limb, even during the application of the first dressings of the wound. If the grip of the suture is not slack it will surely break.

The suture, then, must be slack in the beginning, and it becomes more slack, as time passes, by absorption of the bone about it; so that for the prevention of displacements we must still depend, and from the beginning, on external support and practically to the same extent as if the suture had not been employed.

Of other methods of fixation I can not now speak in detail, but practically all of them are open to the same criticism and some of them to others.

So far, then, as maintenance is concerned, support by the suture is illusory, and all that is gained by the operation is the correction of the primary displacement. What is the value of that adjustment? It appears to consist mainly, if not entirely, in the removal of interposed soft parts or small fragments which, if not removed, would delay or prevent reunion or cause persistent deformity. Such removal of possible obstacles to reunion plays a rather large part in the arguments advanced in favor of operation, but the percentage of failure of union, in all cases, is small, probably not more than 1 or 2 per cent., and in the great majority of these the cause is not the interposition of a removable object; it is either an unknown cause or the suppuration that follows an open wound. That the cause may be independent of malposition is shown by the frequency with which pseudarthrosis persists after operation to remove it. Adjustment, consequently, would be preventive in only a minority of the cases in which failure of union would otherwise occur.

The assertion that only by operation can an ideal restoration of form be obtained is one that appeals to the imagination, to the natural desire that our work shall be of the highest class and our results without blemish. But, as has been shown, direct fixation does not ensure such a result, and in the great majority of cases no better reduction can be maintained than could have been effected and maintained without operation. Moreover, most of these moderate departures from the ideal, unsightly as they may appear in a skiagram, cause no functional and little or no cosmetic loss. They consist in some lateral or some angular displacement and usually some overriding which are unrecognizable by others in ordinary intercourse and are the cause of no limitation to the patient. And, especially in the young, many of them grow less as time passes. The alleged gain is not only more sentimental than real, but is also, in fact, unobtainable.

The cases in which gross displacement exists and can not otherwise be corrected would, then, be the only ones in which operation for the purpose of reduction is clearly indicated.

Furthermore, there are certain positive disadvantages after operation which may well be deemed a counterbalance to far weightier advantages than those which are claimed for it.

1. It is, I think, certain that repair is slower after an operation in which the fragments have been tempo-

rarily still further displaced, as has to be done for the placing of a suture. The reason is, I believe, in the additional laceration of the periosteum, the destruction of the periosteal bridge which plays so prompt and important a part in the repair of a fracture, and the stripping back of the periosteum at the edge of the fracture. A delay of one or even several weeks might be of no great price to pay for a material gain, but a similar and far more important disadvantage is found in the suture or pin used to fasten the bones together. That this is in itself sufficient to cause failure of union I am convinced by many observations. It does so by exaggerating the rarefying osteitis which is a necessary preliminary to reunion and possibly by inhibiting the productive and condensing osteitis which should follow. Thus is created a gap between the fragments, which is occupied by fibrous tissue showing no tendency to change into bone, a gap equivalent in its effects to a loss of substance or to a displacement similar to that which it may have been the object of the operation to correct.

This condition is habitually observed whenever a wire suture has been applied. I have frequently had occasion to cut down on and remove such sutures, and I have always found them lying loose, all the bone originally embraced within the loop having disappeared. Many similar observations have been made with the *x*-rays. This occurrence is constant when metal is used, either as a suture or as a pin, and sometimes the loss is so great as to reduce the ends of the fragments to small, widely separated, conical points. Whether the same result follows the use of silk or silkworm gut for suture I do not know, for I have used these materials only as temporary sutures, when the wound had to remain open, and have removed them after a week or two. In other cases I have always used strong catgut, simple or chromicized, trusting to external support for the later maintenance of apposition.

2. As already mentioned, the manipulations necessary in drilling and suturing the fragments delay reunion, probably by additional injury to the periosteum. But in addition to this the added injury to the soft parts, especially when the bone is not subcutaneous, has two serious drawbacks. It exposes to suppuration to an extent which ample experience has shown to be in excess of that pertaining to other clean operations, and it notably increases the chance of limitation of motion in the neighboring distal joint by cicatricial change in the wounded muscles or by their cicatricial attachment to the callus.

This suppuration is not to be feared as a menace to the life of the patient; it is the expression rather of the bruising of the tissues than of a malignant infection, and can usually be kept in control. Its principal results are the establishment of a sinus leading to the suture or to a bit of necrosed bone and the increase of the cicatricial change in and adhesion of the muscle. The latter is the more harmful the nearer it is to the joint, but it is capable of serious results even when at a distance. I have seen complete stiffness of the knee follow an operation for failure of union after fracture of the femur at the middle, and stiffness of the elbow after an operation for wiring a fracture of the shaft of the humerus, in both of which moderate suppuration occurred.

I can not here elaborate these and other points. I shall only quote in support of some of the statements made some facts from a recent report of 2,700 fractures treated in Körte's hospital service.[1] In four fresh cases wire sutures were used; in two of them suppuration took place. In one of the others, a case of supracondylar fracture of the humerus, the range of motion left in the elbow was only 30 degrees; in a fracture of the femur coaptation was not maintained. In 27 cases (1 per cent.) union failed, and in 10 failure was anticipated after a lapse of three weeks, because of persistent displacement of the fragments. Peltersohn expresses the opinion that very few cases require operation, and says that this opinion is generally held in Germany.

To summarize, then, early operation in simple fracture is to be credited, if successful, with an exact readjustment of the fragments, and this readjustment, if maintained, protects the patient against certain irregularities in the outline of the reunited bone and against such failures of union as might otherwise result from inability to make sufficient reduction. The importance of these advantages is not great; the irregularities of outline are functionally and cosmetically unimportant in the great majority of cases in which proper non-operative treatment has been used, and failure of union in such cases is not only rare, but in the majority of cases in which it occurs is due to general causes and in only a small minority to those local causes which operation can remove.

On the other side of the account is the fact that for the maintenance of this adjustment the surgeon must depend on the usual dressings, whose alleged inadequacy is given as a reason for the operation, or he must use the untrustworthy suture or other mechanical means, and all of these involve the risk of suppuration and delay in or failure of union through causes inherent in themselves. There is also the other fact that the function of the neighboring joint may be diminished or lost through the implication of its muscles in the operation and its repair.

Applying the old criteria of promptness, safety and efficiency, it appears, then, that operation is less prompt in its results and less safe, and more efficient only in a very small number of cases, and should, therefore, be reserved for those cases in which its need is clearly evident—a conclusion which, in the interest of our patients and of our art, I hope may be generally accepted.

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INTERTRANSMISSIBILITY OF BOVINE AND HUMAN TUBERCLE BACILLI

EVIDENCE OFFERED BY CLINICAL ADMINISTRATION OF TUBERCULINS MADE FROM BACILLI OF HUMAN AND BOVINE ORIGIN

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The question of the intertransmissibility of tubercle bacilli of the human and bovine varieties is a purely scientific one and can be settled only by carefully weighing scientific data. It was on this ground that Koch objected to resolutions being passed on this subject at the International Tuberculosis Congress, taking the stand that it was impossible to settle or add anything to a scientific question by passing resolutions.

1. Peltersohn: Arch. f. klin. Chir., 1908, lxxxvi, parts 3 and 4.

DIFFERENT VARIETIES OF BACILLI PROBABLY ORIGINALLY FROM ONE SOURCE

If we approach this study with the knowledge which we have derived from observations in other fields, it is not difficult for us to believe that the different varieties of tubercle bacilli originally came from one single source, but that through adaptation, the one to man, another to animals, and a third to birds, they have finally so changed that they now differ in form, method of growth, virulence toward animals and other characteristics. It is not at all improbable that this change has finally become so great that the bacilli of one variety will not grow at all or only with difficulty on soil ideally suited to another variety.

Not only do we note differences between the human, bovine and avian bacilli, but also differences in type of the same variety. Doubtless part at least of the difference that we notice in various cases of tuberculosis may be due to differences in the bacilli which produce the infection in the various individuals.

It is a common observation that fruits and plants grown in different soils differ in flavor and appearance. It is also known that at times there is such variation that plants raised in one kind of soil will grow with difficulty or not at all in other soils. With this almost universal observation in the vegetable kingdom to influence us, it seems to me that we should approach the subject of tubercle bacilli with a feeling that in all probability we have distinct varieties due to long adaptation to distinct soils. If we carry our reasoning still further, we would expect that, while each variety is best suited to its own host, it is possible that it will grow at times in a different and what would be ordinarily an uncongenial soil.

A study of the bacilli from different sources shows that they differ in form, cultural characteristics, staining qualities and in their virulence toward animals.

PRIMARY INTESTINAL TUBERCULOSIS AND INFECTION OF CATTLE WITH HUMAN BACILLI

The solution of the question of intertransmissibility has seemed to hang largely on two points—the experimental production of tuberculosis in cattle by the use of human bacilli and the recovery from human beings, and especially from primary lesions in the intestinal canals of children, of bacilli having bovine characteristics.

Even these two points, when carefully analyzed, do not carry with them as much weight as might be at first thought. In the first place it means nothing to the practical solution of the problem whether human beings are able to infect dairy herds, to find that cattle become tuberculous when fed for a greater or lesser period of time on human sputum containing bacilli. Animals, like human beings, possess a certain resisting power against bacteria. If bacteria are taken into the body in small numbers, the protective substances of the body will destroy them. In doing so the protective bodies are used up; but from the stimulation of the body cells resulting from the action of the poisons liberated from the bacteria which have been destroyed the antibodies will be restored. In order to allow the body to recuperate its protective power, the numbers of bacteria entering the body must not be too great. If they are introduced in too large numbers or if their virulence is too great, instead of stimulating the cells to the production of antibodies, they destroy the cells. If they are not introduced in great amounts, but the infection is continuous, we can conceive of the antibodies being exhausted and the body being overcome because there is no opportunity for its recuperating itself.

Thus, the feeding of animals on human sputum for many days and months, as has been done in some experiments, may result in infection, but this is not a natural infection; it must rather be considered that the resistance of the animals has been overcome. While it shows that human bacilli can be made to produce tuberculosis in animals when the animals are forced to take them into their systems in large quantities for prolonged periods of time, it gives us no evidence whatever that animals are at all likely to become infected under natural exposure to patients suffering from tuberculosis. It is probable that any human being or any member of the bovine species can be overcome and infected with tubercle bacilli of either the human or bovine type if the subjects take the bacilli into their systems in sufficiently large quantities for sufficiently long periods of time. If it were possible to determine the dosage of bacilli necessary to produce infection in animals, a test of greater accuracy would be the injection of this dose in all instances.

The experiments which have been carried out by the various commissions seem to indicate that the human bacillus is not very virulent for cattle, and, in doses which would produce general tuberculosis if the bovine bacillus were used, it causes few if any lesions.

It being impracticable to inoculate human beings with bovine tubercle bacilli we must determine their virulence for human beings in other ways. Since bovine bacilli are most apt to be taken in through milk, and since children are largely milk-users, it has been thought that if bovine bacilli were virulent for human beings they would attack the intestines of children and cause a great deal of primary intestinal tuberculosis. The fact that primary intestinal tuberculosis in children is not a common disease is taken by the followers of Koch to mean that milk is not a frequent source of infection. When we consider the fact, however, that bacilli can penetrate the mucous membrane of the bowel and leave no lesion behind, and that tubercle bacilli inoculated through the eye, genital tract, peritoneum, etc., produce lesions in other parts of the body, notably the lungs, it would seem that we should not place too much reliance on the incidence of intestinal tuberculosis in childhood as a guide to the amount of infection produced by bovine bacilli. Sufficient evidence has certainly been collected during the past few years to make it probable that the intestinal tract affords a common portal of entry of tubercle bacilli of human as well as bovine origin. It is not improbable that many bacilli that are carried into the nasal and oral cavities by inhalation collect on the mucous membranes and are swallowed and either destroyed in the intestinal canal, excreted with the feces or absorbed through the mucous membrane. If these do not cause infection of the intestines and mesenteric glands at times, we can account for the failure only by suggesting the unenlightening hypothesis that the soil is not suitable. Be this as it may, the cultures taken from intestinal and mesenteric gland lesions in childhood showing the morphologic, cultural and inoculation characteristics of bovine bacilli have been sufficient to warrant the belief that a certain portion of these infections are from bovine sources.

EVIDENCE FROM CLINICAL OBSERVATIONS

It seems to me that clinical observations are of value in the solution of these problems. In the first place, tuberculosis manifests itself in many organs, the localization seeming to depend somewhat on the age of the patient. The course of the disease varies, somewhat, in the different locations. If we recognize that tuberculosis can be caused in human beings by bacilli of both human and bovine origin, it seems to me probable that each bacillus will produce its lesions under the conditions which are best suited to it; in fact, this is a well-established principle in bacteriology. No one can explain just why the diphtheria bacillus ordinarily attacks the tonsils, the pneumococcus, the lungs, the meningococcus the meninges, etc. We cover our ignorance by saying that the individual soil furnished by these tissues is suited to them, but just what it is in these tissues which especially fits them for the various micro-organisms we can not even conjecture. Neither can we explain why certain micro-organisms, such as the pyogenic bacteria, under different circumstances and in different tissues, produce lesions of different virulence. The question that we are discussing would be illuminated by a better understanding of these problems.

The differences in the localization and the character of the lesions in tuberculosis in childhood and adult life have been noted for a long time. The bone lesions, glandular enlargements and meningeal involvements are common to children, while pulmonary involvement is not proportionately as frequently found; in adults, on the other hand, pulmonary involvement is the most common variety, although we do find localization in many other organs, such as the larynx, bowels, glands and genitourinary tract, and infrequently in the bones, mesenteric glands and meninges. Must we account for this by the difference between the child and the adult, or must we look elsewhere for the cause? Could not the difference between the risk run by the child and the adult of being infected by both bovine and human bacilli be an important factor?

Spengler, in his study of the characteristics of bovine and human bacilli, has made the important observation that bovine bacilli grow best on culture media when they are surrounded by little oxygen, while human bacilli grow best when surrounded by large quantities of oxygen. From this he reasons that the same conditions obtain in the body; hence bones, glands, meninges and the various organs of the genitourinary tract furnish conditions most suitable for the growth of the bovine bacillus, while the lungs furnish ideal conditions for the human bacillus.

Raw has arrived at conclusions almost identical with those of Spengler in regard to the clinical distribution of those cases which he believes to be probably of human and those probably of bovine origin.

The results of certain experiments in immunizing cattle against bovine bacilli by the use of human cultures which are carried on by the German Imperial Health Board[1] offer a confirmation of Spengler's view that bovine bacilli grow best away from oxygen. Cattle which had been previously immunized against bovine bacilli by the inoculation of living human bacilli showed great resistance to infection when inoculated with bovine bacilli later. The lungs did not show foci of infection, but the meninges, eyes and genitourinary organs did. This might be interpreted as showing that the soil furnished by the meninges, eyes and genitourinary organs (all away from oxygen) is better suited to the bovine bacilli than that of the lungs, and that when the animals have been immunized the bacilli grow best where conditions are most suitable; hence choose these organs.

1. Tuberk. Arb. a. d. k. Gsndhtsamte. No. 7, 1907.

EVIDENCE DERIVED FROM USE OF BOVINE AND HUMAN TUBERCULINS

For the past three years I have been employing therapeutically tuberculins made from both bovine and human bacilli. My experience shows that their action differs. It is rare that a patient will do equally well on both varieties. Patients with pulmonary and laryngeal affections, as a rule, do best on bovine tuberculin, while lesions of the bones, glands, genitourinary tract, peritoneal cavity (with effusion) and ear do not improve as rapidly under its use and at times seem to be aggravated somewhat by it; on the other hand, pulmonary and laryngeal lesions do not heal so rapidly under human tuberculin as they do under bovine tuberculin, while those of the bones, glands, genitourinary tract, peritoneal cavity and ear do best on the human tuberculin. While all tuberculous lesions may be treated more or less successfully by tuberculins of either variety, yet my experience leads me to conclude that best results are obtained when we have at our command remedies made from both varieties of the bacillus.

Regarding the subject of localization, I do not think that it is possible to draw our lines too tight. For example, when I say that glandular tuberculosis is most likely to be of bovine origin I do not deny that both varieties of bacilli are found in the glands, nor do I doubt that both are capable of producing tuberculosis of these organs, but I do believe that we are justified in concluding that the glandular tissue is suited to the bacillus of bovine origin, and hence that active lesions found here are most apt to be due to the bacillus of bovine type.

When we have gathered together all the facts that have been brought out during the past few years relative to bovine and human tubercle bacilli, I believe that we are warranted in assuming that these bacilli are not only different, but antagonistic, and that infections from the two varieties of bacilli are either not likely to occur in the same individual at the same time, or, if they do, are likely to be infections of low virulence owing to the antagonistic action of the two. That this action is a true antagonism does not seem probable to me, but rather that it is to be explained by the action of the less virulent bacilli from the areas of bovine infection furnishing the stimulation for the cells which calls forth the immunizing response against the more virulent bacilli and toxins of human origin. In infections in cattle the opposite would occur and the less virulent human bacillus would call forth the action of the immunizing machinery against the more virulent bovine bacillus. In support of this view I offer the following observations:

THE ANALOGY OF SMALLPOX AND COWPOX

Cattle are immunized against bovine bacilli by inoculation with human bacilli, and if the inoculations are made sufficiently often it is generally believed that this immunity can be made more or less permanent. In this respect we have an analogy in smallpox and cowpox. Inoculations of human beings with the viru-

of cowpox immunizes against smallpox, and I am told on good authority that smallpox, although transmitted to cattle with great difficulty, protects them against cowpox. Now might we not go one step further and, reasoning from analogy, suppose that from bovine bacilli a virus may be obtained which will protect human beings from infection with human tubercle bacilli? If we are right in assuming that tuberculous lesions of the bones in early childhood are infections of bovine origin we have observations to warrant an inference that these are examples which point to the probability of these early bovine infections conferring immunity to infections from the human bacillus, for we have all observed that pulmonary tuberculosis does not occur as often as we would expect in patients who have had bone lesions in early life. We are compelled to admit that by the use of milk which contains a few bovine bacilli many children may secure a degree of immunity which protects them against infections from human bacilli; and this may be a factor in reducing the tuberculosis mortality during early years.

On this point it would be interesting if we knew the experience of Japan. Kitasato has shown us that pulmonary tuberculosis is just as common in Japan as in other countries, although the Japanese are not a milk-using nation, and their native cattle do not suffer from tuberculosis. This experience of Japan has been used as an example to show that tuberculosis is not, as Behring would make us believe, entirely of bovine origin. Now, a careful analysis of these conditions might furnish us with further important evidence, for if it can be shown that tuberculosis is more virulent in Japan, or that it is more virulent in the early years, it might be argued that there is a certain degree of immunity against human tubercle bacilli conferred by bovine bacilli which are ingested with milk and other dairy products. This same immunity can be and doubtless is conferred, though I believe with greater danger (for, the human bacilli being suited to human soil, infection from them is more likely to occur than from bovine bacilli) by children taking in human bacilli in small numbers; for, with our conception of immunity, we must assume that a stimulation of the machinery of immunization always occurs when bacteria are taken into the system, and that when they are taken in in quantities short of what is necessary for infection to result a certain heightening of the patient's resisting power occurs, which results for the time in an increased immunity on the part of the individual.

BOVINE TUBERCULOSIS DANGEROUS

It can not be argued on these grounds that it is useless to take measures against tuberculous cattle and milk, for the numbers of bacilli in these articles of food can not be measured and no guarantee can be given that infection will not occur. In fact, those infections which seem to be probably of bovine origin, such as tuberculosis of the bones, meninges, mesenteric glands and intestines in children, together with infections of the ear and genitourinary tract, make up about one-tenth or one-twelfth of all cases of tuberculosis, and we can not afford to be careless of any conditions which have such frightful morbidity and mortality, even though in some instances in which infection does not occur a certain degree of immunity may be conferred.

BOVINE AND HUMAN TUBERCULOSIS IMMUNIZE AGAINST EACH OTHER

The reason that we may suppose bovine tubercle bacilli are better able than those of the human variety to confer on human beings immunity against infection from human bacilli, is that they have been grown on the culture medium furnished by the cow and consequently are not so well suited to that furnished by human beings; therefore, they are less virulent to human beings and can be taken into the human system in larger quantities without producing infection, and probably in large enough quantities to produce a considerable degree of immunity. The same explanation holds for our ability to immunize cattle with human bacilli.

Clinically we have found that it is best to treat those infections which we believe to be produced by human bacilli with tuberculins made from bovine bacilli and those infections that we believe to be of bovine origin with tuberculins from human bacilli.

I offer the following theoretical suggestions as a possible explanation in support of this observation. The bacilli of bovine and human varieties are originally from one parent stem and very closely allied, yet different. The toxins which they produce differ, yet they are so near to each other that each one is able to stimulate the physiologic machinery of immunization and cause the production of specific antibodies which are, perhaps, active against the entire group of tubercle bacilli. The advantage of treating a given infection by the tuberculin made from the other variety of bacilli is that the toxin introduced into the system is not the same as the one which is already producing the symptoms of the disease, yet is so similar that it stimulates the cells to the production of the proper specific antibodies, thus furnishing protective substances without increasing toxic effects.

My clinical experience with bovine and human tuberculins shows not only that they differ, but also, if I interpret my observations correctly, that certain patients are improved by one and irritated by the other; also that very few patients do equally well on both preparations, and that when the preparation is suited to the case the increase in dosage can be made much more rapidly than with the other preparation. The preparations which I have used most extensively in this test have been P.V. and T.B.V. (Spengler), which are a combination of the endotoxins and the soluble toxins standardized in terms of the solid extract. When the vaccine is properly suited to the case I can often advance from an initial dose of 0.000,0001 mg. to 0.01 or 0.02 mg. of the solid extract in a period of from four to six weeks without the production of any temperature reaction. Coincident with this rapid increase in dosage there is usually a general decrease of symptoms and improvement of the patient.

Occasionally I find a patient with pulmonary tuberculosis in whom under P.V. (bovine vaccine) the sputum and cough will rapidly decline, but when T. B. V. (human vaccine) is given both sputum and cough will increase at once. In several cases in which both pulmonary and glandular involvement were present, I found it difficult to treat the patient because the glands were irritated by the P.V. while the lungs were benefited, and the lungs were irritated by T.B.V. while the glands were greatly benefited by it. In one very instructive case the cough greatly diminished and the sputum dropped from 100 c.c. to 50 c.c. under P.V., but the

deep cervical glands became swollen and painful so that a mass as large as the fist presented. I changed the vaccine at once to T.B.V.; and, after the second injection, one of 0.000,0001 mg., and two days later, one of 0.000,001 mg. the pain disappeared and the skin over the gland was wrinkled. Coincident with the improvement in the gland there was a decided increase in cough and expectoration, showing that the pulmonary condition was not so satisfactory. To show that this was not coincident, when the glands had nearly disappeared, I again changed to P.V., when they promptly began to swell and the cough and expectoration just as promptly began to improve. After some time we secured an apparent healing of the gland, after which the patient bore the P.V. without any difficulty and to the greatest benefit of the pulmonary condition. My belief is that this case was one of double infection, consisting of a human infection of the lungs and a bovine infection of the gland. It is also of interest to record that the case was not one of great virulence.

The experience of one vaccine irritating while the other improves the lesion is a very common one with me. I believe that it throws light on the subject of the bovine and human infections. One other especially instructive case was that of a patient with both pulmonary and renal involvement. The patient did splendidly on watery extract (von Ruck), a preparation of human bacilli, but I changed to P.T.O. (Spengler), a bovine vaccine, and 0.000,01 mg. caused a violent reaction with renal colic and hematuria. On returning to the use of watery extract the patient was apparently cured.

CONCLUSIONS

Interpreting laboratory findings, animal experiments, clinical observations and the diagnostic and therapeutic use of tuberculins made from bacilli of both human and bovine varieties, as well as reasoning from the analogy between smallpox and cowpox, I feel that we have some light thrown on the question of intertransmissibility of tubercle bacilli of human and bovine origin that can not be derived from the laboratory and animal experiments alone.

The following points in the discussion of this question seem to be pretty thoroughly established:

1. Human and bovine tubercle bacilli are different, as shown in: (a) morphologic characteristics, (b) cultural characteristics, (c) virulence for animals, (d) staining characteristics (not generally confirmed).

2. Cattle can be immunized against bovine bacilli by inoculation with moderate numbers of human bacilli.

3. The resistance of cattle can be overcome and infection brought about by inoculation of human bacilli in large numbers or in moderate numbers if the inoculations are kept up for a prolonged period of time.

4. Human beings are sometimes infected with bacilli of bovine type.

Reasoning from the data obtained from the diagnostic and therapeutic use of tuberculins made from bacilli of bovine and human types, we conclude that:

1. Bovine and human bacilli are different in that their toxins are different.

2. Judging from the manner in which patients suffering from tuberculosis react toward tuberculins made from human and bovine bacilli, we would conclude that both varieties of bacilli are able to produce tuberculosis in the human body, but that the localization of the two infections is more or less constant. We have found that:

A. Infections of the lungs, larynx and intestines, when complicating tuberculosis of the lungs, are, as a rule, best treated by tuberculins made from bovine bacilli. These infections are most probably produced by bacilli of human origin.

B. Infections of the bones, glands (as a rule), peritoneum (with effusion), ear and genitourinary tract are, as a rule, best treated by tuberculins made from human bacilli. These infections are most probably produced by bacilli of bovine origin.

Reasoning from the analogy furnished by smallpox, the fact that human bacilli will immunize cattle against infection with bovine bacilli would suggest that bovine bacilli might immunize human beings against human bacilli; and, if our belief that tuberculosis of the bones is of bovine origin is true, and our observation that persons suffering from bone lesions rarely suffer from tuberculosis of the lungs is correct, we have clinical evidence which supports the fact that immunity in human beings against human bacilli may be produced by infection with bacilli of the bovine type.

THE INCIDENCE OF TUBERCLE BACILLI IN NEW YORK CITY MILK

WITH A STUDY OF ITS EFFECTS ON A SERIES OF CHILDREN *

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One of the most important questions to-day which confronts those fighting the spread of tuberculosis is: What proportion of infection is human, what proportion bovine in origin? It is not necessary for me to review in this place the various answers that are given this question by sincere and capable workers in the same or different countries. In the United States we find Theobald Smith[1] stating that, in his opinion, not over 1 per cent. of human tuberculosis is of bovine origin, and, on the contrary, others — for example, Ravenel[2]—believing that a considerable percentage of the disease is of this origin. The British Tuberculosis Commission recently reported that "a very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli." The opposite view of Professor Koch is known to all. In view of such conflicting statements on a subject of such vital importance, physicians and laymen are, at the present time, undecided whether they should concentrate their energies against the dangers from the tuberculous individual, or whether they must guard against a dual source of infection. Prophylaxis suffers from this indecision.

SCOPE OF THE INVESTIGATION

My work was undertaken with a threefold object: 1. probing one of the elemental phases of this broad question, to ascertain how often milk supplied to a large city, such as New York, contains virulent tubercle bacilli; 2. to study the nature of these bacilli, to learn whether they conformed uniformly to the bovine type

* From the Research Laboratory, Board of Health, New York.
* Read at the New York County Medical Society, Nov. 23, 1908.

1. Smith, Theobald: The Channels of Infection of Tuberculosis, Boston Med. and Surg. Jour., Sept. 26, 1907.

2. Ravenel: Etiology of Tuberculosis, Am. Jour. Med. Sc., October, 1907.

as was to be expected considering their source; and, finally, 3, to report on the health of some children who consumed milk containing virulent bacilli.

I realized that the presence of tubercle bacilli in milk did not necessarily furnish an index of the frequency of infection of those who drink such milk. Nevertheless, it shows the frequency of exposure to this infection, so that it is important that we should at the outset have an approximate idea of the incidence of such bacilli in the market milk. I found experiments of this nature surprisingly few in number and conflicting in results. The milk of New York City had never been investigated in this particular, and examinations which had been made elsewhere were, in the main, incomplete or dated back to a period when our milk was obtained under quite different conditions from those which exist at the present time. However, since I began this investigation more than a year ago, a comprehensive report of the tuberculous contamination of the milk supply of the city of Washington has appeared,[3] to which I shall refer in detail. The literature of this subject will be found well abstracted in this publication.

As I have mentioned, the second part of my investigation consisted in isolating in pure culture some of the tubercle bacilli found in the milk, and in differenentiating them according to type. This was undertaken in order to learn whether all the cultures would prove to be bovine, or whether possibly we might find human or intermediate varieties. It seemed also desirable that more strains should be isolated from bovine material, in order to judge more certainly of the distinction between the two types of bacilli.

The material was obtained in the following manner: In the tests of raw milk, specimens were gathered only from the large forty-quart cans and not from bottled milk. This was done, partly because the facilities of the health department rendered it simpler, but more especially because more than one-half of the milk sold in New York is not bottled, but constitutes the so-called "loose milk." The fact that unbottled milk forms such a large proportion of the municipal supply is sufficient in itself to warrant its selection as a basis for examination. Furthermore, loose milk and bottled milk are frequently identical, are dispensed by the same dealer and derived from the same dairy. The specimens were collected in the same manner as those brought to the laboratory twice a week for general bacteriologic examination. I used the same sterilized one-ounce bottles with a tight-fitting tin cap. The milk was taken indiscriminately from grocery stores, dairies and large plants in various quarters of the city. Two specimens were dipped out from each can, one for the bacterial count, another for examination for tubercle bacilli. Six to twelve were collected at a time for my purposes, although one hundred were obtained by the inspectors for general examination. In most cases I obtained the milk myself, and my selection was guided merely by an attempt to obtain specimens from dealers who had small children who drank this milk in a raw state. This was done with the object of determining the subsequent health of these children, which study forms the basis of the third part of this paper.

INVESTIGATION OF TUBERCLE BACILLI IN MILK

In the laboratory the specimens were kept in the refrigerator. Before being opened they were thoroughly shaken and then 10 c.c. of milk were removed by means of a sterile pipette and transferred to a small tube, in which it was centrifuged from five to seven minutes. Two smears were made from the surface of the cream which formed a solid layer at the top of the tube. The entire cream layer, which varied in amount, was removed by means of a sterile copper spoon and placed in a Petri dish. The skimmed milk was poured away and disregarded, with the exception of the lowest cubic centimeter, which was poured into another dish. Two smears were made from the dregs in the centrifuge tube.

These two portions of milk, the cream and the lowest cubic centimeter, were drawn into small antitoxin syringes and injected into two guinea-pigs. It was necessary to dilute the cream with a small quantity of salt solution in order to render it fluid. As far as possible unused pigs of medium weight were employed; in many instances, however, I had to use larger pigs which had served as tests for diphtheria antitoxin. In order to make certain that such pigs were not previously tuberculous, autopsies were performed on fifty which had been used in this work. In no instance was any tuberculous infection encountered. In the early tests the inoculations were made into the muscles of the thigh, following the recommendation of Ostertag.[4] Later, however, subcutaneous inoculations into the groin were resorted to, as the disadvantages of the intramuscular method outweighed its advantages. It was found that the deep injections at times gave rise to hematomata at the site of inoculation, that they were sometimes followed by sudden death, and that the inguinal glands enlarge less markedly than when the pigs were inoculated subcutaneously. For each inoculation a different syringe and needle were used. The pigs inoculated on the same day were kept in the same cage. Very few abscesses developed, probably owing to the fact that almost three-quarters of the inoculations were made deep into the muscles: those which did form did not ulcerate through the skin. The animals were examined twice a week. They were not killed after a definite period, but in some instances, in which cultures were not desired, they were allowed to live long after they were known to be tuberculous. In this way we could judge somewhat of the dosage and the virulence of the tubercle bacilli in the milk.

One hundred and twelve specimens of raw milk were tested in the manner described, but as in five instances the animals died within two weeks of inoculation or were lost in other ways, only 107 came under consideration. Table 1 gives a summary of the results. Nineteen specimens were found to contain tubercle bacilli. It was found, however, on tracing all these samples to their source, that two were duplicates, so that we must consider that the positive inoculations numbered only seventeen. Thus the figures resolve into seventeen positive tests out of 107, which means that 16 per cent. of the milk contained tubercle bacilli.

In every one of these seventeen cases, as well as in the two duplicates, tubercle bacilli were found in the guinea-pig at autopsy. The case was looked on as negative unless the bacilli were shown to be present. For example, the autopsy of pig 436, killed three months after inoculation, reads as follows:

3. Anderson: U. S. Hyg. Lab. Bull. 41.

4. Ostertag: Untersuchungen über die klinische und bakteriologische Feststellung der Tuberkulose des Rindes, 1905.

Somewhat emaciated, large bilateral inguinal glands; mesenteric glands hard, size of small marble; slight enlargement of iliac and retroperitoneal glands; spleen three times normal, containing a caseating abscess, and miliary tubercles. Liver showed miliary tubercles, lung negative.

TABLE 1.—DATA OF TUBERCULOUS MILK SPECIMENS.

Date.	Tuberculous Specimens.	Tuberculous Sediment or Cream.	Bacteria per c.c.	Designation of Wholesaler.	Wholesalers Who Sell Similar Milk in Bottles.
10/24	1	*Sediment.	390,000	A	0
11/7	1	Sediment.	4,800,000	B	1
	1	Cream and Sed.	80,000	C	1
11/12	1	Cream.	170,000	W	1
	1	Cream and Sed.	90,000	W	1
11/19	1	Cream and Sed.	80,000	E	1
	1	Cream and Sed.	00000,000	B	1
11/25	..	.....	.....	..	..
12/5	1	Sediment.	50,000	O	0
	1	Cream.	1,400,000	G	1
	1	Cream and Sed.	20,000	B	1
	1	Cream.	60,000	B	1
	1	*Sediment.	00000,000	B	1
12/19	..	.....	.....	..	..
12/26	..	.....	.....	..	..
12/31	1	*Sediment.	00000,000	E	1
	1	Cream and Sed.	8,000,000	H	6
	1	*Cream.	230,000	B	1
1/6	1	Cream and Sed.	160,000	J	1
	1	Cream and Sed.	180,000	J	1
	1	*Cream.	60,000	J	1
	1	Cream and Sed.	00000,000	J	1
	19				
Excluding duplicates...17					

* Animal inoculated with other part of milk lost or died.

At the time of autopsy these lesions were considered definitely to indicate tuberculosis, but as bacilli could not be found, and reinoculation tests proved inconclusive, the case was rejected. In most instances reinoculation into a second series of pigs was made (Table 2).

TABLE 2.—DATA OF MILK INOCULATIONS

Date.	No. Samples.	No. Pigs Inoculated.	No. Dying within 14 Days.	Otherwise Lost.	Secondary Inoculations.
10/24	12	24	2	2	2
11/7	12	24	..	..	6
11/12	12	24	..	..	2
11/19	12	24	..	..	4
11/25	6	12	..	..	4
12/5	12	24	1	..	6
12/19	6	12	1	..	
12/26	6	12	1	1	
12/31	12	24	1	3	
1/6	10	20	4	3	2
2/5	12	24	..	1	
Total	112	224	10	10	26
Net total	107				

(In five instances both pigs were lost or died.)

In order to control the results still further and avoid the possibility of confusing the tubercle bacillus with similar acid-fast organisms, cultures were made in each instance. In those cases in which serum or egg media were not employed—in other words, in which the object was not to cultivate the tubercle bacillus—glycerin agar was used. In no instance was an acid-fast organism encountered.

The smears made from the cream and from the sediment, of which mention has been made before, showed no tubercle bacilli. In no slide could they be definitely made out, although in those instances in which animal inoculations demonstrated tuberculosis the slides were carefully examined for a second time. They showed a large number of bacteria and leucocytes, roughly about an equal number in cream and sediment, but the number was found to bear no relation to the presence or absence of tubercle bacilli in the milk (Table 1).

I next examined some "commercially pasteurized" bottled milk, making use of the same technic. Eight samples were obtained from three different plants, with the intention of using more samples should these first tests give a negative result. The dealers in this milk state that it has been subjected to a temperature of 160 F. for forty seconds. In one of the eight samples tubercle bacilli were demonstrated by animal inoculation, which proves that this method, in practice, furnishes inadequate protection. Investigation on this particular was pursued no further.

HUMAN AND BOVINE TUBERCLE BACILLI IN MILK

Before discussing the results which we have outlined above, it may be well to give a brief account of the cultures of tubercle bacilli which were isolated. The details of this laboratory study will be published elsewhere. The method used was that employed by me in former work in this field.[5, 6] For the first generation dog serum or egg medium was used. The morphology of the bacilli, facility for cultivation, and virulence toward rabbits were considered in the differentiation of the human from the bovine type. The ability of a culture to induce a fatal generalized tuberculosis in the rabbit was looked on as evidence of its being bovine in nature. Eight cultures were isolated in all; in two other cases cultures were attempted but failed. From a practical standpoint it is of importance that, although seven proved bovine in type, in one case a human strain was isolated. As far as I am aware this is the first instance in which contamination of milk with the human type of tubercle bacillus has been demonstrated. The actuality of this source of infection, therefore, can no longer be denied; it must be considered in the safeguarding of our milk supply. On the farm, at the dairy, in the retail store, in the varied path from cow to consumer, the tuberculous individual must not have access to the milk.

The percentage of milk found to contain tubercle bacilli, namely, 16 per cent., is so high that we feel that it requires further comment. It must be admitted that the milk chosen for examination, commonly known as "loose milk," is somewhat below average grade. In this fact, however, we can find little comfort, for subsequent inquiry revealed that of the nineteen tuberculous specimens fifteen were sold by dealers who furnish bottled milk coming from the same farms (Table 1). This shows that an examination of the average bottled milk would reveal very nearly the same figures. Another matter of practical interest concerns the diffusion of the bacilli throughout the milk. If several samples were taken from the same can, would all or only some show the presence of tubercle bacilli? This question, which was constantly in mind, was answered by a chance control experiment. In some instances the samples were taken at random from those sent to the laboratory by the inspectors. It so happened that of the 10 samples submitted on January 6, 4 proved to be contaminated with tubercle bacilli (Table 2). Recently, on inquiring into the source of these samples, it was learned that the four were taken from two cans in the same plant—in other words, that 2 were duplicates. This method of control specimens is resorted to by the Board of Health to compare the results of the bacterial counts. In this instance it served as an unconscious control of my work. Of the 8 guinea-pigs

5. Hess: An Examination of Excised Tonsils. Arch. Pediat., January, 1908, p. 31.

6. Hess: Primary Tuberculosis of the Mesenteric Glands. Am. Jour. Med. Sc., August, 1908, p. 1831.

inoculated with these 4 specimens, 7 developed tuberculosis, 1 dying prematurely of a secondary infection. As only 10 c.c. of milk were used for the test in each instance, that is, less than one tablespoonful, this would lead us to conclude that these two forty-quart cans were thoroughly permeated with tubercle bacilli, and that there was little possibility of any one partaking of the milk without at the same time partaking of virulent bacilli. Some other of our results lead to the same conclusion: The fact that on November 12 (Table 1) two positive specimens were obtained which emanated from the same wholesaler, although retailed by different stores on the same block, and that on December 5 this was the case in three instances, demonstrates that a considerable portion of the milk sold by the wholesalers on those dates contained tubercle bacilli.

Without attempting a review of the literature we should like to call attention in this connection to the results of some others in similar investigations. In the comprehensive test of the milk supply of the city of Washington, reported this year by Anderson, 6.72 per cent. of the samples were found to contain tubercle bacilli, a percentage considerably lower than that which I report for New York. This wide variation can be accounted for in part by differences in the technic which was employed. In the Washington tests usually only one animal was used for each sample, and, second, the cream was not injected. Had these methods been followed, our percentage would have been considerably lower. This may be judged by the fact that of the 19 tuberculous specimens only 9 produced tuberculosis in both of the injected animals (Table 1). In 5 instances this was due to the premature death of one of the pigs. It may be said in general that the more animals used for testing each sample the greater the chance of finding tubercle bacilli. The other point of difference in technic is more important. As bacteria collect in the cream as well as in the sediment, it is evident that unless we test both portions some may be overlooked. It will be noticed that in 2 of our cases bacilli were demonstrated in the sediment alone, in 3 others in the cream alone (Table 1). The animals injected with the negative portion of these samples developed either no lesions or such as were inconclusive. Had we not injected the cream, 3 of the positive cases would have been reported as negative, which in itself would have reduced our figures from 16 per cent. to 13 per cent. Moreover, higher percentages than we have obtained have been published by others. For instance, Rabinowitch and Kempner[7] found, in an examination of 25 samples of Berlin milk, that 7 samples, or 28 per cent., contained tubercle bacilli. And again, in an examination by Macfadyen[8] at the Jenner Institute, 17 among 77 specimens, or 22 per cent., were found to be infected with virulent tubercle bacilli.

CONDITION OF CHILDREN WHO DRANK TUBERCULOUS MILK

So much concerning the laboratory part of this study. We have shown how frequently tubercle bacilli are present in the milk of a great city; how, although generally bovine in type, they may be of the human variety. Let us now consider the condition of some children who drink this milk. As I mentioned above, samples were gathered in most instances from such dealers as had children. Each store-keeper was asked whether there were children in the family, and, if so, whether they were given raw milk from the can in the store. Of the 17 dealers from whom milk was obtained which contained tubercle bacilli, 10 belonged to this category. These ten had 18 children. As Table 3 shows, 9 of these were 2 years of age or under, and only 1 over 5 years of age. The health of these children has been followed for the past year, that is, since they are known to have ingested virulent tubercle bacilli. They have been visited by me from time to time, and finally during the past fortnight 16 were tested with tuberculin and subjected to a more or less complete physical examination. The conjunctival tuberculin test was employed, as it was feared that the cutaneous test might not be permitted. The parents were told the reason for this medical supervision, and in only a few cases offered objections. The results, which are given in tabular form (Table 3) were briefly as follows:

TABLE 3.—DATA CONCERNING CHILDREN WHO DRANK MILK CONTAINING TUBERCLE BACILLI

Milk. Dealer.	No. of Children.	Age, Years.	Conjunctival Test.	Condition One Year Later.
A	2	1	—	Healthy.
		3	—	Healthy.
B	1	1½	—	Healthy.
C	2	2	—	Poorly nourished.
		4	—	Healthy.
W	3	5/12	0	Healthy.
		2½	—	
		5	+	Poorly nourished. Physical exam. and family history doubtful.
E	1	½	—	
B	1	2	+	Poorly nourished. Cervical adenitis incised 4 mos. ago. Von Pirquet positive. Family history negative.
G	3	3	—	Healthy.
		5	—	Healthy.
		9	+	Healthy. Family history negative.
B	1	5/6	0	Healthy.
B	2	1½	—	Poorly nourished.
		3½	+	Healthy. Physical exam. and family history negative.
O	2	2	—	Healthy.
		4	—	Healthy.
	18		4	

+ = positive reaction.
— = no reaction.
0 = no test.

Of the 16 children tested with tuberculin, 4 reacted; 2 of these were poorly nourished, but showed no definite signs of tuberculosis; the other 2 were healthy. One of the cases was of especial interest: This child consumed daily a pint of the poorest milk examined (B, Table 1). She was 2 years of age, poorly nourished, and five months ago developed a cervical adenitis, which was incised at a dispensary. She reacted to both the conjunctival and von Pirquet tests. No other member of the family appeared to be tuberculous.

We realize that we can not draw sweeping deductions from an experiment of this nature. It lacks the precision of laboratory work, a weakness inherent to a test on the human subject. It may well be said that we know neither how often the children drank milk containing tubercle bacilli nor the number of bacilli consumed. In answer to this we can merely state that 10 c.c. of this milk showed the presence of virulent bacilli; that these bacilli were found to be thoroughly distributed throughout the milk, and that the children in most instances consumed a pint or even a quart of such milk daily. Moreover, as this is the only investigation of the kind which has been made, and which it seems possible to pursue, it seems worthy of consideration.

First and foremost it is evident that as almost all the children who drank the milk were later found to

7. Rabinowitch and Kempner: Ztsch. f. Hyg., 1899, xxxi.
8. Macfadyen: Lancet, London, 1899, ii, 849.

be in good health, we may conclude that milk containing tubercle bacilli does not necessarily, nor even usually, excite tuberculosis. The striking frequency with which we found bacilli would of itself force this conclusion on us. For with 16 per cent. of the "loose milk" infected, if infection were coincident with exposure, it would mean that on an average every child who drank this raw milk daily for a week would show some tuberculous lesion. Tuberculin tests and postmortem examinations on infants prove the fallacy of such reasoning. On the other hand, the occurrence of a case of cervical adenitis, one of the most frequent forms of bovine tuberculosis, in an infant known to have drunk milk containing bovine tubercle bacilli, who reacted to tuberculin although surrounded by no source of tuberculous infection, is certainly suggestive of bovine infection. We hope to follow the course of this child and some of the others so as to judge of their future welfare.

It seems to us, judging from our own investigations and those of others, that, at the present time, the relation of bovine tuberculosis to man may fairly be stated as follows: 1. This type of bacillus, although less virulent than the human variety, is capable of infecting human beings. 2. Children are more susceptible than adults to bovine infection. Numerous instances of tuberculosis of the tonsil, of the cervical and of the mesenteric glands have been proved to have been incited by the bovine bacillus. Among others, Theobald Smith, Fibiger and Jensen, the German and the British Commissions, and myself,[5] have reported cases of this nature. Recently I was able to collect reports of 44 cases of undoubted bovine infection of the mesenteric glands, 41 of which occurred in children.[6] In this connection a case taken from this year's Medical Report of the County of Aberdeen, and sent to me by Dr. Adams, seems worthy of summary. A farm servant who had three daughters, aged 9, 6 and 4 years, lost the eldest on Jan. 7, 1907, with symptoms of meningitis. In the beginning of March the youngest became ill and died on the 18th with similar symptoms. An autopsy showed tuberculous meningitis and tuberculosis of the mesenteric nodes. In the cerebrospinal fluid tubercle bacilli were found. There was no history of tuberculosis on the father's or mother's side. The milk which these children drank came from one cow, which was found to have tuberculosis of the udder, and was killed and shown to be suffering from extensive generalized tuberculosis. Careful cultural examinations of bacilli from the cerebrospinal fluid of the child, as well as from the milk and from the mesenteric glands of the cow, were made by Dr. J. Milner Adams, of the University Pathological Department, and all found to be bovine in type and similar in their microscopic, cultural and pathogenic characteristics. Neither this well-studied case nor the figures given above are, indeed, sufficient to prove that bovine tuberculosis is the "great white plague" which we are all fighting, but they do show, without doubt, that this bacillus is fraught with danger to children. Even the stanchest supporter of Koch would not care to have his children drink milk from a cow which he knew to be giving forth tubercle bacilli.

As yet there is no sufficient basis for a statistical estimate of the importance of bovine tuberculosis, but we must remember that even if, with Theobald Smith, we charge it with but 1 per cent. of the total tuberculous infections, this small percentage is sufficient to establish it as a disease worthy of active recognition. To appreciate the force of the plea for recognition of such a small percentage we have but to reflect that tuberculosis claims in the United States every year approximately 200,000 persons and that the total number of infections amount to twice this number. Thus, this small percentage is sufficient to cause the yearly number of cases of bovine infection of human beings in this country to extend into the thousands. It is solely because this type of tuberculosis is submerged by the 90-odd per cent. of human tuberculosis that it is now threatened with losing its identity. If it were possible to diagnose bovine infections by clinical methods, and if the total number were grouped under a different name, instead of being included in the generic term "tuberculosis," we would have a disease of sufficient magnitude to preclude all question as to the advisability of active preventative measures. Were there as great a number of human beings infected, for instance, by the foot-and-mouth disease of cattle, the matter would be considered as requiring state or federal attention. So that, to summarize, without ever losing sight of the fact that the bacillus of the human type is the cause of the great scourge, the scourge of tuberculosis, it would seem wise, also, to regard the bovine bacillus as the cause of an unquestionable, although comparatively small number of tuberculous infections.

Finally, a word as to the practical lesson which this investigation teaches. It is not new; it has been emphasized with ever-increasing earnestness by many students of the problem. It is to be hoped, however, that the alarming degree of tuberculous contamination found in the New York City milk, and the concrete figures which I have furnished, may prove an effective argument for those who are striving with the legislators in the cause of pure milk. It may be thought that, as I used mixed milk in the tests, it is possible that the bacilli were, in many instances, given off by one infected cow in a herd and were diffused throughout the supply. We can not well fall back on this comforting explanation, when we reflect that a recent report by Moore[9] showed that of 421 herds in New York State tested with tuberculin, 302 contained reacting animals. This high percentage of disease harmonizes with the high percentage of contamination which I found in the city milk. Again, the investigations of Schroeder[10] showing how frequently feces are present in milk, and how frequently tubercle bacilli are present in the feces of apparently healthy cattle, point clearly to a widespread dairy infection. In view of these facts, it would seem wise, as an immediate safeguard, thoroughly to pasteurize or to boil all milk not coming from tuberculin-tested cows. "Commercial pasteurization" does not protect against tubercle bacilli; it should not bear the name of pasteurization, or, at most, this milk might be termed "partially pasteurized milk."

At the same time that we are carrying out these temporary expedients, those who are urging broader remedial measures, such as adequate inspection and testing of the dairy herds, should be accorded the support of physicians and laymen alike. For if New York City had been granted, instead of 47 inspectors of farms, 150 such inspectors, it is certain that 16 per cent. of the milk sold in its precincts could not be found to harbor virulent tubercle bacilli.

9. Moore: Can Tuberculosis be Eliminated from Cattle? New York State Jour. Med., 1908, viii, No. 5.
10. Schroeder: The Unsuspected but Dangerously Tuberculous Cow, Bureau of Animal Industry, Cir. 118.

SUMMARY

Virulent tubercle bacilli were found in 17 among 107 specimens, that is in 16 per cent. of the milk retailed from cans in New York City. These bacilli were not demonstrable by direct microscopic examination, but were proved to be present by means of animal inoculation. Cream as well as sediment was found to harbor these organisms, so that in all experiments of this nature these two parts of the milk should be used in making inoculations.

Tubercle bacilli were likewise found in a specimen of "commercially pasteurized" milk, showing that this method, as now carried out, does not insure protection in this particular. It is suggested that, as this name is misleading, only such milk be labeled "pasteurized" as has been heated for a length of time and to a degree of temperature sufficient to render it an absolutely safe food.

When the tubercle bacilli were isolated they were found to be in all but one instance bovine in type. In this instance, however, a human variety was differentiated, which shows that milk may become infected from tuberculous individuals and that this source of contamination should be guarded against.

A number of infants and young children who drank milk containing tubercle bacilli, when examined one year later, seemed to be in average health. A fourth of the number, however, reacted to tuberculin. One of these subjects was in poor physical condition and had suffered from a recent glandular infection.

Although probably over 90 per cent. of tuberculosis is due to infection from human beings, it is believed that we are not, therefore, justified in neglecting the danger from bovine infection, for even a small percentage of the infections in the United States means thousands of cases of tuberculosis.

As an immediate safeguard, milk not coming from tuberculin-tested cows should be pasteurized or brought to a boil. Many additional inspectors should be allowed for examining the herds, and, finally, all cows should be tested with tuberculin, and animals which react should be condemned or isolated.

154 West Seventy-second Street.

A CLINICAL STUDY OF THE CHILDREN OF TUBERCULOUS PARENTS *

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This report is based on the careful examination of 150 children whose parents were under treatment for pulmonary tuberculosis at the Bellevue Hospital Tuberculosis Clinic. The examinations were made as a part of the routine of the clinic work in an endeavor to supervise these families and to discover unsuspected cases of tuberculosis.

The children observed lived in tenements, in most instances under insanitary conditions and in close association with their parents, the majority of whom had pulmonary tuberculosis in an advanced stage. With few exceptions the children were sent for examination to the clinic, not because of any symptoms of which they complained, but simply as a routine procedure on the part of the visiting nurse.

Their ages varied from 2 to 15 years, with an average age of 8½ years.

BASIS OF DIAGNOSIS

The difficulty of diagnosis in such cases is easily appreciated, but as preventive work of this sort marks the line along which progress in our knowledge of tuberculosis must proceed, our endeavors to reach a definite diagnosis in these cases may be of interest and of value.

The most important factors in diagnosis may be summarized as follows:

1. The tuberculin tests.
2. Pulmonary symptoms and physical signs.
3. Sputum examinations.
4. Joint, bone and other non-pulmonary lesions.
5. Malnutrition.
6. Hypertrophied cervical lymph nodes.
7. Hypertrophied tonsils and adenoids.

A diagnosis can be reached only by a consideration of all of these factors taken together, and on this basis we have classified our cases into

A.—Positively tuberculous.
B.—Doubtful cases.
C.—Not tuberculous.

A. Positively Tuberculous Cases.—In this class are included, 1, all cases in which there are positive typical signs in the lungs or demonstrable joint or other non-pulmonary lesions elsewhere in the body; and, 2, all other cases in which there are suspicious symptoms, such as malnutrition, persistent cough or inconclusive physical signs in the lungs which react positively to tuberculin.

B. Doubtful Cases.—These include cases of, 1, all children in whom tuberculin tests were not made, who showed constitutional or pulmonary symptoms or irregular signs in the lungs, or who showed distinct malnutrition without any other symptoms or physical signs; and, 2, those of all apparently healthy children who react to tuberculin.

C. Non-tuberculous Cases.—We have placed in this class, 1, all cases in which tuberculin tests were made and in which there was no reaction; and, 2, all cases in which no tuberculin tests were made and in which the children showed no symptoms or physical signs and were of normal weight for their age.

It is immediately evident that in a large number of cases we have employed the tuberculin tests as the determining factor in diagnosis. Our reason and justification for so doing will be discussed later.

RESULTS

Of the 150 cases examined, the results according to the above classification were as follows:

1. Positively tuberculous, 76 cases, or 51 per cent.
2. Doubtful, 31 cases, or 20 per cent.
3. Not tuberculous, 43 cases, or 29 per cent.

These results, showing that more than one-half of the children examined were positively tuberculous, are so astonishing that they can be accepted only after the most rigid scrutiny of the methods which we have employed. This we have attempted to accomplish by careful analysis of our findings, studying separately each of the various factors which have been used in establishing the diagnosis.

* Read before the Children's Section of the International Tuberculosis Congress, Washington, Sept. 21 Oct. 12, 1908.

FACTORS IN DIAGNOSIS

1. *The Tuberculin Tests*

One hundred and thirteen of our subjects were tested with the ophthalmic and the cutaneous tests. In 38 of these cases the results of the ophthalmic and cutaneous tests were controlled by the hypodermic tuberculin test.

The ophthalmic test was made with a 1 per cent. solution of crude tuberculin in sterile salt solution, following closely the method and system recommended by Baldwin.

For the cutaneous test we used varying strengths, 10 per cent., 25 per cent. and 50 per cent. of crude tuberculin in sterile salt solution. Only the results obtained with the 10 per cent. and 25 per cent. solutions are, however, considered here. In no case in which the 50 per cent. was positive was the 25 per cent. negative.

In the hypodermic method we have considered 5 mg. as the maximum diagnostic dose, and in the great majority of our cases in which reactions were obtained it was not necessary to go above 1 or 2 mg.

Of the 113 children tested with tuberculin, 74, or 65 per cent., reacted positively.

In 95 cases the ophthalmic and the cutaneous tests were made in the same individual. The results of these two local tests were identical in all cases but 10. In 9 of these cases a cutaneous reaction occurred without any corresponding ophthalmic reaction. Four of the children were subsequently tested hypodermically and all reacted.

In the remaining case, which was that of an overgrown boy of 15 years, the eye reaction occurred without a skin reaction. This suggests a confirmation of the general impression that the cutaneous test is more reliable in children than in adults.

Recurrence of the local reaction both in the eye and in the skin during a reaction to the hypodermic test, given from three to five weeks later, was noticed in several cases.

We have been fortunate in encountering none of the permanent or serious injuries from the ophthalmic tests which have been reported by other observers, but some of our reactions were very severe and prolonged. Only one skin reaction was sufficiently severe to cause discomfort to the child. This one went on to slight suppuration and the formation of crusts resembling closely the vaccination pustule. In this case, however, we could not positively eliminate the possibility of a secondary infection from scratching.

Since we have employed the scarifier, suggested by von Pirquet, our cutaneous reactions have been on the average less severe.

Comparative Value.—The ophthalmic test is more apt to meet with resistance from the child, and in the case of such resistance it can not be performed as carefully and thoroughly as the skin test, which, of course, militates against an accurate result. This is especially true in case the child cries. Under these circumstances a considerable portion of the fluid instilled will be washed out of the eye. This reaction, moreover, is frequently very transitory, disappearing within twenty-four hours, and in the event that the child does not return within that time for examination, the possibility that a positive reaction has escaped notice always remains.

To accept a parent's statement as to the results of the test is, of course, to render its value entirely negligible. Even to have a nurse visit the homes, either of all the patients tested within the first twenty-four hours, or simply the homes of those children who do not present themselves for examination at the clinic at the time ordered, is not satisfactory or reliable. The diagnosis of a reaction, which is at times so delicate as to be influenced even with a trained physician by the "personal element," should be made only by the physician himself.

The cutaneous test, on the other hand, is open to none of these objections. It can be detected in the great majority of cases for at least five to seven days after the inoculation, and in well-marked cases pigmentation and scars remain at the site of the inoculation for a considerably longer period. Moreover, in a certain number of children who are seen early after inoculation a skin reaction occurs without a corresponding eye reaction.

The following facts seem to justify us in considering a positive skin reaction as presumptive evidence of tuberculosis in children:

1. Of 9 children with positive typical physical signs of pulmonary tuberculosis in whom the test was made, all reacted.

2. Of 73 children with suspicious pulmonary symptoms, 80 per cent. reacted. Of 40 children without such symptoms only 40 per cent. reacted.

3. Of those with physical signs in the lungs, both typical and atypical, 82 per cent. reacted; of those with no physical signs, only 48 per cent.

4. Of those whose nutrition was below par and had in addition cough and physical signs in the chest, 88 per cent. reacted. Of those children of normal weight and without pulmonary symptoms or physical signs, only 25 per cent. reacted.

5. In the 38 cases controlled by tuberculin injections there was no discrepancy between the cutaneous and the hypodermic tests in any case. Nine of these subjects were negative and 29 positive to both tests.

It should, of course, be borne in mind that not every subject reacting to the local tuberculin tests is necessarily in need of active treatment as a case of tuberculosis, though such cases should be kept under careful observation. Given a tuberculin reaction in an apparently healthy child, the course to be pursued should depend on the course of the case under close supervision.

2. *Pulmonary Symptoms and Physical Signs*

Eighty-seven of our children, or 58 per cent. of all, gave a history either of protracted cough or of coughs and colds recurring with unusual frequency. Of these 87 a positive diagnosis of tuberculosis was made in 65 per cent.

Seventy-three children had abnormal physical signs in the lungs, and of these 72 per cent. were positively tuberculous according to our classification.

On analyzing the physical signs it is interesting to note that only 15 children had the apical signs usually accepted as being typical of pulmonary tuberculosis in adults, and that all of these 15 children were over 9 years of age. The other 58 children had physical signs which have not been generally accepted as typical of pulmonary tuberculosis in children, or, we might say, as of even suggesting it.

The most important of these signs are fine localized subcrepitant râles situated in some portion of the lungs other than the upper portion of the upper lobes. These râles were present in 35 cases and occurred usually without any change in the percussion note or breath sounds.

In most instances, 28 cases out of the 35, they were found in the region of the nipples, usually in the fifth or sixth intercostal spaces just without the mid-clavicular line. In two-thirds of the cases they were on the left side. In a few cases they occurred on both sides.

These râles differ very decidedly from the râles of atelectasis in that they do not disappear on coughing or deep inspiration. In most instances they are constant, being heard consistently on several repeated examinations. In a few instances they were inconstant or were developed during the course of a tuberculin reaction. In almost no cases, however, were they audible over a period of several months' duration.

The area over which these râles were distributed varied from that which could be covered by the bell of the stethoscope up to that larger than a silver dollar. In a few cases a gradual decrease in the size of the area or a diminution in the number of the râles heard over any one area could be traced in conjunction with the improvement of the particular case under treatment.

The presence of these râles we consider very suggestive of a tuberculous focus in this situation, the infecting bacilli probably being carried to this point by the lymphatics from the bronchial glands about the root of the lung.

We have not attempted to decide what might be the extent or exact character of the pulmonary lesion which these physical signs represent. Autopsy reports on infants and young children dying from pulmonary tuberculosis show that marked discrepancy between the physical signs and pulmonary lesions very frequently exists, so that it would be hazardous to predicate from the physical signs what the exact pathologic findings might be.

Careful *x*-ray examinations might be of service in such cases, and we are planning to have such examinations made in the future.

In addition to the 35 children who showed these fine râles above described, there were in our series 23 who exhibited sibilant and sonorous râles over the lungs. These râles were localized in various portions of the chest in 10 cases. In the other 13 cases they were more or less generally distributed.

Of these 58 cases with atypical signs, that is, with the localized subcrepitant râles and the sibilant and sonorous râles, signs which are not generally accepted as typical of pulmonary tuberculosis, a positive diagnosis of tuberculosis was made in 39 or 67 per cent. Nine subjects were considered doubtful, and 10, or 17 per cent., were not tuberculous. Further analysis shows that of the 35 cases in which there were localized fine râles a diagnosis of positive tuberculosis was made in 74 per cent., and of those with fine râles near the nipples in 82 per cent. Ninety-two per cent of these children on whom tests were made reacted positively to tuberculin. Of the 23 children who had sibilant and sonorous râles, 56 per cent. were considered positively tuberculous. In 10 of these cases these râles were localized, and here 80 per cent. were tuberculous, as against 35 per cent. of the remainder in which the râles were generally distributed over the chest.

Considering the constitutional condition and the pulmonary signs together, we find 39 cases in which abnormal physical signs and general malnutrition were associated. In these 31 children, or 79 per cent., were tuberculous, 2 were doubtful and 6 not tuberculous.

We believe that the physical signs in the chest above described as being atypical signs of pulmonary tuberculosis are found sufficiently frequently in children to warrant their acceptance as very significant in weighing the question of a diagnosis of tuberculosis. Taken in connection with the tuberculin tests, they produce a definite clinical picture in many cases. If this is true, it undoubtedly follows that pulmonary tuberculosis in children is far from being an uncommon form of the disease. The course of the disease in these cases is not at all that which is usually described as being the common one in tuberculosis in children. The symptoms as well as the signs are few, the progress of the disease very slow, and both signs and symptoms clear up in a majority of cases under appropriate treatment, that is, taking the children out of school and keeping them in the open air.

The frequency with which we have encountered these cases suggests strongly the possibility that it is these cases in which the tuberculous lesion, remaining latent during childhood for many years, may break out into adult phthisis later in life. This hypothesis would fit in very well with modern notions of the frequency of tuberculous infection during childhood. Certainly in this series of cases those children who reacted to tuberculin showed more often these pulmonary signs and symptoms than any other evidence of disease elsewhere in the body.

3. *Sputum Examinations*

Very few of the children expectorated and sputum examinations were made in only 16 cases. In only one of these were the tubercle bacilli found. In a few cases the method advocated by Holt, of exciting a cough and catching the sputum brought into view on a swab, was attempted. In no instance did it give a positive result.

These findings do not accord with those recently published by Holt and others. Their patients, however, were in hospital wards and were acutely sick, many of them finally dying of the disease. Ours, on the other hand, were only slightly ill, their parents usually not being aware that there was anything wrong with their children except perhaps that they were delicate or poorly nourished.

It is possible that by the inoculation of guinea-pigs by fresh specimens of sputum from these cases a larger number of positive results might be obtained. It is our hope to carry out some investigations along these lines during the ensuing year.

4. *Joint, Bone and Other Non-pulmonary Lesions*

Ten children in whom the diagnosis of tuberculosis was made showed evidence of tuberculous lesions elsewhere than in the lungs.

In 2 cases there were scars in the neck anterior to the sterno-mastoid muscle. These resulted from the closure of sinuses of previously suppurating glands, presumably tuberculous, inasmuch as the suppuration did not occur at the time of any acute infectious disease. In one of these cases pulmonary signs were present. Both children reacted to tuberculin, to the hypodermic as well as to the local tests.

Five other children each had one or two markedly enlarged cervical glands which were considered tuberculous, and one of these had pulmonary signs as well. Tuberculin tests were made on the other 4 children without pulmonary signs. All 4 reacted.

Of the 3 remaining children, 1 had tuberculosis of the hip, 1 had a tuberculous dactylitis and a scar resulting from a tuberculous ostitis of the radius, and the

last had tuberculous peritonitis and enteritis. The last had pulmonary tuberculosis as well. All three reacted to tuberculin.

In view of the opinion generally held concerning the relative frequency of pulmonary and other forms of tuberculosis in children, it is worthy of note that out of 76 cases of the disease chosen at random, but 10 of them should show non-pulmonary lesions, and even more so that but 7 of these, or but 8 per cent. of the total number of cases, should show tuberculous lesions without any pulmonary involvement.

5. *Malnutrition*

One hundred and seven children of our 150 were under the standard weight for their age. Of these, 62, or 58 per cent., were tuberculous; 19, or 18 per cent., were considered doubtful, and 26, or 24 per cent., were non-tuberculous.

Eighty-two of the 107 were tested with tuberculin; 56, or 68 per cent., reacted. Of 31 children whose weight was normal only 18, or 59 per cent., reacted.

Of children with symptoms and malnutrition, 48 per cent. of those tested reacted. Of children with symptoms but with no malnutrition, 36 per cent. reacted.

There were 50 children with physical signs in the lungs and malnutrition. Of 42 of these tested, 36, or 85 per cent., reacted. Of 21 with signs in the chest and without malnutrition, 16, or 76 per cent., reacted.

In 41 cases were symptoms and signs and malnutrition associated. Of 34 children tested, 30, or 88 per cent., reacted. Of 13 children with symptoms and signs without malnutrition, 9, or 69 per cent., reacted.

Of 24 children tested with no symptoms or signs but poorly nourished, 9, or 38 per cent., reacted. Of 8 children tested with no symptoms or signs and of normal weight, only 25 per cent. reacted.

Of these 9 children with no pulmonary symptoms or physical signs in whom a diagnosis of tuberculosis was made, there were non-pulmonary tuberculous lesions present in 5. In the other 4 cases the diagnosis was made on the malnutrition together with a positive tuberculin reaction.

From the figures given above it would appear that the presence of faulty nutrition in a child in whom tuberculosis is suspected renders the existence of this disease more probable, inasmuch as in the children suffering from malnutrition in addition to presenting symptoms and physical signs, a much greater proportion were found to be tuberculous than of the same class of children whose weight was normal.

In children who can be kept under observation over a considerable period of time an approximately stationary weight during this period is even more suggestive of tuberculosis than the mere presence of faulty nutrition, provided that in them we have any reason to be suspicious of the existence of the disease. Actual loss of weight over such a period is extremely suggestive.

In 100 cases in which the height was measured, 73 children were under the standard weight for their height. Of these 31, or 42 per cent., were tuberculous; 23, or 32 per cent., were doubtful; 19, or 26 per cent., were not tuberculous.

6. *Hypertrophied Cervical Lymph Nodes*

We have classified as hypertrophied those cervical lymph nodes which were palpable and at least the size of a small pea. Palpable nodes apparently smaller than this are not included as being hypertrophied.

In our cases we found 79 children in whom the cervical glands were hypertrophied, including 2 cases in whom scars were present, presumably from previously caseating cervical glands. Of the 79 children in whom enlarged glands were found, 60 per cent. had tuberculosis.

Enlarged lymph nodes were present in three-fifths of all those children who reacted to tuberculin, and in our subjects who showed definite pulmonary symptoms and physical signs a slightly larger proportion of those who had enlarged nodes in addition reacted to tuberculin than did those which had no such enlargement. On the other hand, of those children who had symptoms but no physical signs, only two-thirds of those who also had enlarged nodes reacted to tuberculin, while of such children who did not have enlarged nodes all reacted.

In addition we noted that hypertrophied lymph nodes were present in the same proportion of those children who had permanent physical signs and of those who did not, and that they were present in only 40 per cent. of our subjects who showed the usual typical physical signs of tuberculosis in the lungs.

7. *Hypertrophied Tonsils and Adenoids*

These were present in 65 of our cases; 31 of these children, or 47 per cent., were considered tuberculous.

They were present in only 43 per cent. of the children reacting to tuberculin, in 35 per cent. of those who had physical signs in the lungs, and in only 20 per cent. of those who had typical pulmonary signs. Of the children who gave a history of cough, 7 per cent. more of those who did not have enlarged tonsils reacted than of those with them. These results were contrary to our expectations and do not accord with the findings of several other observers. They are, of course, at decided variance with general opinion on this subject.

CONCLUSIONS

1. In the children of tuberculous parents, who live in close association with such parents, a large proportion (in our series 51 per cent.) become infected with tuberculosis.

2. The earliest manifestations of such tuberculosis are not found in the superficial glands or in the bones and joints, but in the lungs.

3. The physical signs of these early pulmonary lesions, in children under 10 years of age, are very rarely those usually found in adults, but consist more often in the presence of persistent fine râles just without the mid-clavicular line in the fifth and sixth intercostal spaces. In other cases in which persistent sibilant râles are present in varying portions of the chest, the diagnosis is doubtful, but they should be regarded with suspicion.

4. The tuberculin tests furnish the most reliable means of diagnosis of tuberculosis in children. Of these we regard the hypodermic test in doses up to 5 mg. as positively diagnostic. Of the local tests the cutaneous is more reliable in children than the ophthalmic and presents none of its possible dangers. Moreover, it has in our hands been fully corroborated by the hypodermic test, and in consequence we regard it as a reliable and safe means of diagnosis of tuberculosis in children.

5. Examination of the sputum, as usually practiced, is of almost no aid in the diagnosis of early pulmonary

tuberculosis in children. As a routine procedure it is not very feasible in dispensary practice.

6. Malnutrition is sometimes the only appreciable evidence of tuberculosis in children.

7. The presence of hypertrophied tonsils and adenoid growths in any child does not appear to incline the balance in a suspected case toward a positive diagnosis of tuberculosis. In view, however, of the varying opinions held on this subject, further investigations along the lines of the bacteriology and pathology of this subject should be made.

8. In our cases the evidence that the enlargement of the cervical lymph nodes is of aid as a determining factor in arriving at a diagnosis of tuberculosis in children is not conclusive.

ETIOLOGY OF FACE, NOSE AND JAW DEFORMITIES *

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In 1874 I commenced a systematic investigation to ascertain the character and determine the classification of deformities of the head, face, jaws and teeth, and I followed this by a study of the degenerate classes. Results of these researches have been published from time to time in medical and dental journals and are here summarized.

To the great anatomist, Camper, belongs the credit of first studying the human face from the scientific standpoint. His name, therefore, was given to the facial angle which still serves as a standard by which to judge lower animals. In one of his works he gives (Fig. 1) a physical observation on the difference of the feature of the rank of the human face in comparison with the face considered in profile, as the heads of apes, orangutans, of negroes and other peoples, tracing up to antique heads. He remarks that the reader will be astonished to find among his first plates two heads of apes, then a head of a negro and then one of a camel.

Fig. 1.—The evolution of the human face from the anthropoid ape to the ideal face described by Camper. The point of interest is the anterior brain development and the recession (degeneration) of the face and jaws.

FACIAL EVOLUTION

In the evolution of the human face, commencing with the heads of apes and advancing along the line of evolution traced through heads of the higher monkey types, of negroes and of individuals of different races, we arrive at the ideal face of the Apollo Belvedere, which Camper calls an antique head. In this evolution it will be noticed that the lower face and jaws have receded and the cranium, including the brain, has gradually developed forward until the forehead, face and jaws are on a perpendicular line, as shown in the last profile of Figure 1 and illustrated in Figure 2. To prove that this evolution is still going on I have only to call attention to Figure 3. The heads shown in this figure are profile views taken from some of my patients. Commencing on the left the evolution is shown in Figure 3 as still progressing up to the head numbered 7. In the last two heads on the right atavism has occurred, which will be explained later. Starting with the negro in Figure 1, including all the heads in Figures 1 and 3, we have types of all the different races from the earliest to the most modern. By studying these illustrations, one with experience can almost determine a racial type by the cranial angles and the jaws in relation to the perpendicular line.

Comparison of the two extremes may be of value. An examination of the negro of the lower types in Mississippi, made for me by Dr. William Ernest Walker of New Orleans, showed that in 97.5 per cent. of the cases the jaws protruded beyond the perpendicular line. An examination of 10,000 people in the streets of London, on the other hand, revealed the fact that in only 4.13 per cent. of the cases examined did the jaws extend beyond the line; in 12.87 per cent. of the cases the jaws were on the line, and in 83 per cent. the jaws were inside of the line. The evolution of the Aryan race, which has taken thousands of years, is more readily understood by comparing it with the evolution of the negro in this country, which has taken place in 250 years. The importation of the negro to America placed him in a mental atmosphere different from that of Africa. Change in the character of food and the resulting ease of mastication under the law of economy of growth, caused rapid degeneration of the jaws and teeth from disuse. Intermixture with other races, together with environment, has caused the head to change from a dolichocephalic (long-headed) to a mesaticephalic (medium-headed) type. In many cases a brachycephaly (short-headedness) occurs. The forehead protrudes beyond the jaws instead of receding, thus giving the brain potentiality of development and mentality.

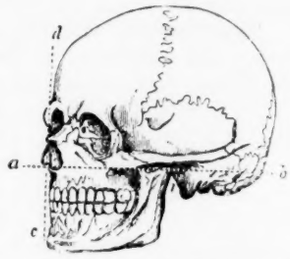

Fig. 2.—A skull showing the head, face, jaws on a straight perpendicular line (the Cuvier angle) and corresponding with the last profile in Figure 1. Up to this period in man's evolution deformities of the nose are rare. Deformities of the jaws and teeth are seldom seen.

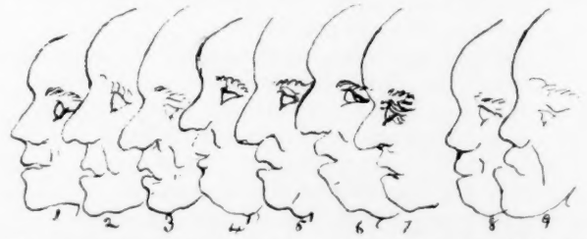

Fig. 3.—The evolution of the face progressing beyond the perpendicular line. The perpendicular line is to all intents and purposes the dividing line between the normal structure of the face and where the pathologic begins.

FACIAL DEVELOPMENT IN THE NEGRO

An examination was made of negroes in this country, commencing with those in Mississippi. There the percentage of jaws protruding beyond the perpendicular

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

line, as shown in the first profile (Fig. 4) was 97.5 per cent., and only 2.5 per cent. of the jaws examined were on the line, as shown in the second profile (Fig. 4). Out of 1,000 negroes examined in Boston, on the other hand, the profile of 45.4 per cent. are represented by the first profile in Figure 4; the jaws of 35.5 per cent. were on the line, as illustrated in the second profile; and the jaws of 15.1 per cent. were inside of the line, as illustrated in the third profile. In an examination of 2,000 negroes in Chicago only six had dolichocephalic heads. The tendency is fast developing toward the mesocephalic type.

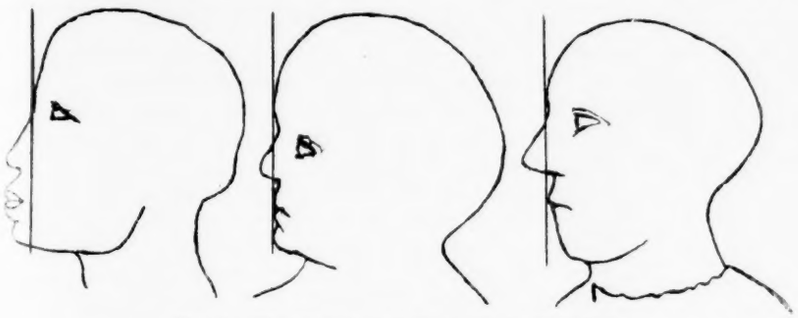

Fig. 4.—The evolution of the negro in 250 years.

It is hardly necessary for me to discuss the subject of brain development brought about by evolution, for it is well known that mental capacity is due to the anterior development of the frontal lobes. In order that this may take place the cranium must develop anteriorly. The greater the intelligence of a race the greater becomes the frontal development. That this may take place, other structures of the head, face, jaws and teeth, under the law of economy of growth and use and disuse of structures, recede from the perpendicular line and grow smaller. In the early races the jaws measured two and one-half inches from the outer surface of the first molars, while to-day the jaws measure, on an average, only two inches. The anteroposterior measurement has diminished proportionately.

Fig. 5.—A fetus at 4½ months, the first period of stress, exhibiting the simian or old man type. The wrinkled and arrested face, the long skinny limbs, hands and the flat feet approach the anthropoid ape.

MOLARS IN EVOLUTION

In normal jaw recession the teeth and alveolar process naturally undergo changes to adapt themselves to the new environment. The teeth change their shape. Instead of being bell-crowned the approximal walls are almost if not quite straight. In some cases these walls are actually straight. These changes do not take place fast enough for the receding jaws, so to assist in this adaptation the third molar teeth (which once had three distinct roots like the first and second molars) now in many cases converge into one, and the tooth is fast being superseded altogether. Some years ago I found in a tabulation that from one to all four of the third molars were missing in 47 per cent. of patients over 25 years old. The next to be superseded in the process of evolution is the lateral incisor, which is missing in about 6 per cent. of patients. With this evolution going on in the teeth the alveolar process becomes thinner on the buccal, palatal and lingual surfaces as well as between the roots of the teeth; hence the tissues are more susceptible to interstitial gingivitis.

To summarize these results: In man's evolution certain structures develop and others are lost for the benefit of the organism as a whole. Since the face, jaws and teeth are undergoing such rapid changes, these are structures with transitory characteristics and are more easily involved in disease than any others of the body.

In the development of man from the primitive cell periods of stress due to readjustment to environment occur. Those which occur during development are called periods of evolution and those after maturity periods of involution. In man's evolution certain parts disappear for the benefit of the organism as a whole; in the evolution of organisms certain organs disappear. Periods of stress occur when the functions of some organs are lost and those of others gained by development. The law of economy of growth centers around this struggle of organs or organisms for existence. Because of this

Fig. 6.—Arrest of the nose, face, jaws and teeth.

fact physiologic atrophies and hypertrophies (arrest and excess in development) occur.

THE FIRST PERIOD OF STRESS

The first period of stress is the most important as far as the head, face, jaws and teeth are concerned. It is called the senile or simian period and it occurs at about the eighteenth week of fetal life (Fig. 5). This period, however, varies according to the development of the particular structure under consideration. Thus the first teeth undergo change during development at about the second month. The permanent teeth, however, begin to develop later in fetal life and the period of stress in relation thereto occurs at the time of their formation. Other structures of the body would gain or lose during their development. In man's fetal development from the cell he passes through all adult stages of lower vertebrates, fish and reptile to bird and mammal. Arrest and excess in development take place in all structures under similar conditions.

The retrogressive phase of evolution, with which Camper did not deal, underlies all pathology of the face, nose, jaws, alveolar process and teeth. The illustrations, supplementing those of Camper, portray this reverse phase, in which symmetry of the body as a whole is sacrificed to changes in the nose, jaws, alveolar process and teeth to preserve the gain in brain matter. In his evolution from the simple cell to a fully developed animal, man has developed a nervous system as a result of a loss in explosive force. How well this nervous system is developed depends on the health of the brain. The brain of man develops first, to preside over the development of the other structures. If the brain is normal, the structures of the body will develop normally; on the other hand, if from any cause the brain is abnormally developed, unstable or defective, the structures of the body become abnormal. When arrest of brain development occurs, degenerates of various classes result. The causes which bring about arrest or excess in fetal development at the first period of stress are fatigued reproductive organs of either parent but more especially of the mother. Neurasthenia or fagged-out nervous system is due to excesses in eating or drinking and to habits, worries and uncertainties.

A common and interesting retrogressive development includes the entire head and face. The forehead recedes from the perpendicular line and the jaws sometimes protrude beyond the line. This is a return to the lower types of man, and the more marked forms of degeneracy are exhibited in the resultant individual. This may often be seen in the idiot, the insane, the criminal, the periodical drunkard, the deaf-mute, the congenital blind, the one-sided genius, the habitual liar, the "smart" business man, the extreme egotist, the tramp, the kleptomaniac, the harlot and the pauper, whose deficiencies are due to a want of frontal brain development and stability or power to control.

THE SECOND PERIOD OF STRESS

The second period of stress occurs after birth at the time of development of the first set of teeth. During this period the child is apt to contract all the children's diseases. The entire alimentary canal, as well as the whole system, undergoes a change. The body is endeavoring to adjust itself to the requirements of the assimilation of solid food. Should any of the eruptive fevers due to contagions or infections occur the effect on the growing structures of the child is most marked, causing an unstable nervous system and producing arrest and excess in development. The bones of the face, nose, jaws and teeth are usually the first affected.

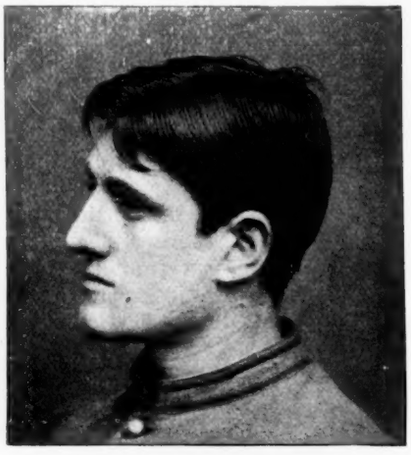

Fig. 7.—A young criminal with typical anteroposterior arrest of the face.

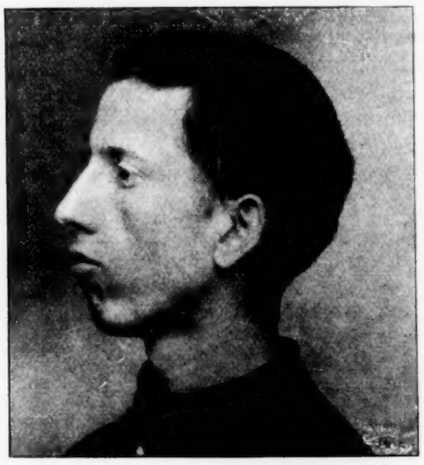

Fig. 8.—A criminal with lateral arrest of development of the face. The two forms are the types of arrested faces. In both are all deformities of the nose, face, jaws and teeth.

These structures, early in evolution, are sacrificed to the gains of the central nervous system. On them, therefore, do struggles for existence between organs leave most decided marks. It is not uncommon for development of the nose to be arrested in utero or soon after birth and remain so throughout life (Fig. 6). Two facial types result from arrest of development. Figure 7 shows the arrest anteroposteriorly, Figure 8 laterally. All other types of arrested development are modifications of these two. They may be more intense or less marked. The development of the bones of the nose may become arrested at an earlier time. The lower jaw in Figure 7, while apparently excessive in development, is really normal. The seeming excess is due to the arrested development of the face. Were the face normal the lower jaw would not appear so prominent. Because of its mobility the lower jaw is more likely to be normal in neurotics and degenerates than the upper. The lower jaw, also because of its mobility, sometimes becomes excessively developed, as illustrated in the ninth head in Figure 3, and then is atavistic; the lower jaw in Figure

8 is arrested in development. Arrested development of the face nearly always involves the upper jaw. Arrest and excess in development of the nasal bones necessarily result in arrest of both the anteroposterior and lateral development of the face. When arrested development of the face and jaws takes place the lateral measurement from the outside of the molar teeth is reduced from two inches, which is the average lateral diameter in normal individuals at the present day, down to an inch and one-quarter or an inch and three-quarters in width.

It is not my intention in this paper to enter into a study of the causes and formation of irregularities of the teeth except to say that these irregularities are seldom inherited. The nature and the character of deformities of the teeth depend entirely on the order of eruption. The eruption of the teeth may be compared to a game of checkers or chess: the first moves on the board decide the game. The method and date of eruption of a few teeth decide the shape of the dental deformity.

Whenever arrest of the development of the jaws takes place there is also nasal stenosis with atrophies or hypertrophies and deformities of the bones of the nose and mucous membrane. It will be seen that the two conditions go side by side. Neither is dependent on the other to any marked degree as was formerly supposed, both being the result of an unstable nervous system. The successful treatment of one must exert a healthful influence on the other.

The perpendicular line, then, is the dividing line between the normal and abnormal facial angle. Deformities of the face, nose, jaws and teeth rarely require treatment except under conditions where these structures develop inside of the perpendicular line drawn at right angles to a line from the root of the nose to the external auditory meatus.

103 State Street.

BONE PATHOLOGY AND TOOTH MOVEMENT *

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CHICAGO

Until 1899 there was little or no knowledge in regard to the physiologic and pathologic changes in the alveolar process during tooth regulation. The question had frequently been asked, What changes take place when pressure is brought to bear on the teeth.

At that time I commenced a series of experiments on dogs, the results of which were published in the fourth edition of my work on "Irregularities of the Teeth and Their Treatment." Impressions of the dogs' mouths were taken in modeling compound, and caps of German silver were made for the cuspids. A jack-screw was soldered to the caps. The dogs were securely fastened into a V-shaped box with cotton bandages, chloroformed and the appliances cemented into place. Muzzles were then placed on the dogs' heads and their forefeet tied to prevent removal of the appliance. The muzzles and bandages were removed twice a day for the purpose of feeding. The screws were given one-fourth, one-half and one full turn every evening. The screws were 60 threads to the inch. The teeth of three dogs were moved 1/240, 1/120 and 1/60 of an inch daily, respectively, as suggested by Farrar.[1] At the end of three days the muzzles and bandages were removed, the dogs having become accustomed to the appliances. This process, in which the screw was turned one-fourth and one-half turn each day, was continued for seven days; the one in which the screw was turned one full turn was continued for two weeks. The object was to set up pathologic changes in the alveolar process similar to those produced in the human mouth.

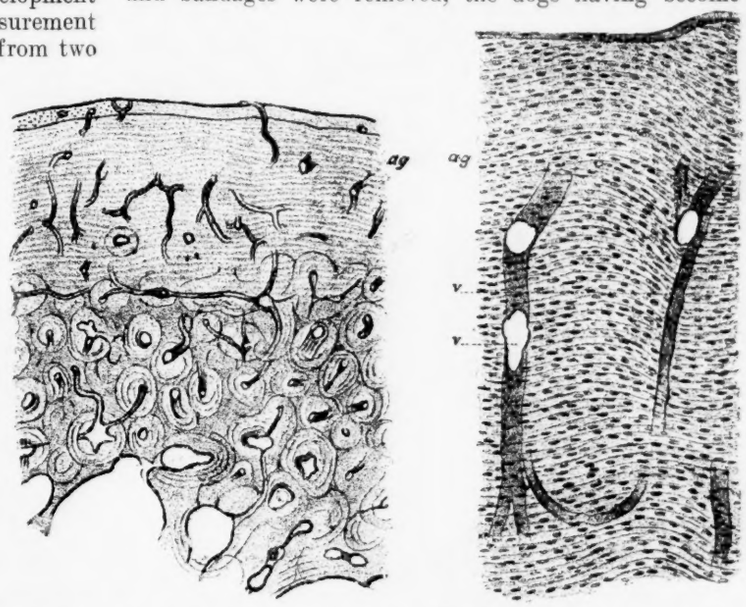

Fig. 1.—(a) Cross-section of medulla of calcified human humerus, showing Volkmann's canals; (b) transverse section under higher power.

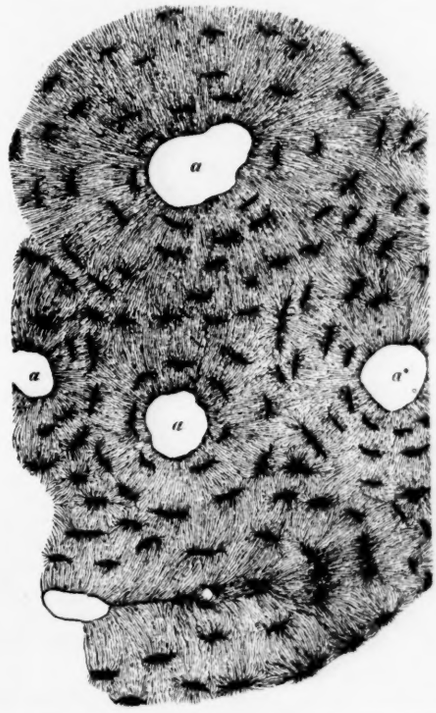

Fig. 2.—Showing Haversian canals a, a, a; dark spots surrounding Haversian canals lacunæ.

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

1. Dental Cosmos, xviii, 23.

The dogs were killed at the end of the periods mentioned. The jaws were placed in 65 per cent. alcohol for twelve hours, in absolute alcohol for forty-eight hours, and then transferred to 5 per cent. nitric acid and water. The latter was changed every two days for a week, or until the tissues became soft enough to be easily penetrated by a pin. They were then placed in running water to remove acid, which took from twelve to twenty-four hours. The tissues were placed in 65 per cent. alcohol six hours; in 95 per cent. alcohol six hours and absolute alcohol twenty-four hours. They were imbedded in thin celloidin twenty-four hours; in thick celloidin twenty-four hours; then mounted on blocks of wood and hardened in 80 per cent. alcohol from six to twenty-four hours. The specimens were cut and stained in hematoxylin-eosin.

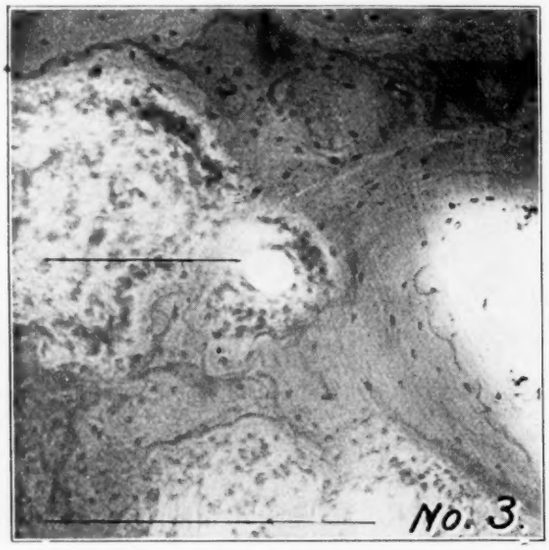

Fig. 3.—Halisteresis, or absorption of alveolar process, taking place at four Haversian canals.

Fig. 4.—Two Haversian canals with bone destroyed between them.

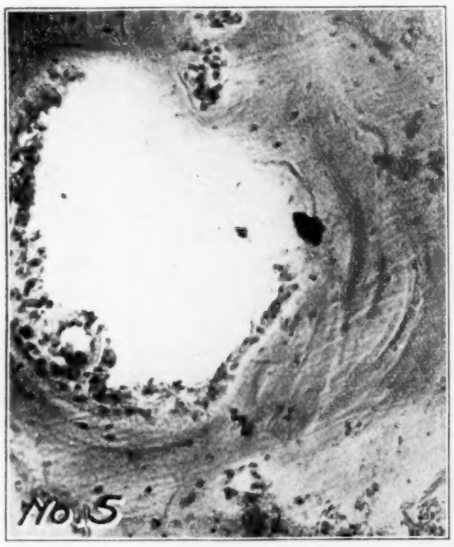

Fig. 5.—Large area of absorption, with destruction of fibrous tissue, and an artery, once a Haversian canal; outside of the absorption area, three Haversian canals with inflammatory process just beginning.

Fig. 6.—Four centers of absorption at Haversian canals; vessels of von Ebner running in all directions.

Before describing the results of these researches let me take up the minute anatomy of bone tissue. Under the microscope two systems of Haversian canals are seen in the alveolar process. Kölliker[2] describes these as follows:

> The Haversian canals are of two kinds, one with the regular lamellæ system surrounding it and the other, the so-called Volkmann's canals, containing the perforating vessels of von Ebner, which have no surrounding lamellæ but simply penetrate the layers of bone. Volkmann's canals are present in all tubular bones in old and young. While especially present in the outer basal lamellæ, they occur also in the interstitial leaflets and in the inner chief lamellæ as well as in the periosteal layers of the skull bone. Here their number is very variable. They run partly transversely or obliquely and also partly longitudinally through the lamellæ. Many of these canals open into the outer or inner surfaces of the substantia (compact substance), and also here and there into the Haversian canals and usually form altogether a wide-meshed irregular network. In their structure they are sometimes smooth and sometimes furnished with dilatations and angles projecting in and out in profile. The widest has a diameter of 100 microns or more, and the narrowest not more than 10 or 20 microns; and there are still narrower ones which are altogether obliterated, ap-

2. Handbuch der Gewebelehre, p. 272.

pearing like rings or circular-formed structures without any lumen, or like those far from rare obliterated true Haversian canals first described by Tomes and de Morgan. The contents of the Volkmann canals are the same as those of the Haversian canals.

Figure 1 (a) is a cross-section of the medulla of a calcified human humerus slightly enlarged. The outer lamellæ contain a large number of Volkmann's canals running longitudinally and transversely and extending through the outer plate of bone into the periosteum. Figure 1 (b), transverse section of the specimen seen in Figure 1, shows these canals under higher magnification.

The Haversian canals are large round spaces (Fig. 2), containing a single artery and vein. The fine hair-like spaces running from these large spaces are the canaliculi. The dark spots around each Haversian canal are the lacunæ. The canaliculi run from one lacuna to another into a Haversian canal, or they anastomose with each other. The rings of bone about each Haversian canal are called lamellæ. The lacunæ seem to be about uniformly distributed throughout the bone. The spaces between the lacunæ and canaliculi are filled with lime salts.

Fig. 7.—Lacunæ or osteoclast absorption.

When pressure is applied to a tooth, irritation and inflammation is set up in and around the arteries. The larger arteries running through the Haversian canals are first involved. An inflammatory process is set up around the margin of the Haversian canals and absorption takes place. Figure 3 shows the absorption of the alveolar process taking place at four different points or Haversian canals. The process of absorption is called halisteresis, meaning melting away of bone substance. The inflammation thus set up produces rapid absorption. Each of these four areas enlarge until they unite, producing larger ones. The lime salts are thus destroyed, leaving the fibrous tissue or trabeculæ intact. A considerable quantity of bone may be observed remaining in this illustration. Figure 4 shows two Haversian canals with the bone entirely destroyed between them, while Figure 5 illustrates a large area of absorption with destruction of the fibrous tissue. Around the border is seen a small amount of inflamed fibrous tissue; an artery, once a Haversian canal, is also seen. Outside of this large area are also seen three Haversian canals with the inflammatory process just beginning.

Figure 6 shows four centers of absorption at Haversian canals. The dark lines running in all directions through the picture are the vessels of von Ebner, through which Volkmann's canal absorption takes place. A beautiful illustration of this is the canal running from one large area of absorption to the other. Figure 7 shows the third form of bone absorption, lacunæ or osteoclast absorption. Here a large area of bone is destroyed by these large cells. Figure 8 is a low-power view, showing the destruction of the alveolar process due to pressure and absorption between the roots of the two teeth. Very little of the bone remains. When large areas of trabeculæ or fibrous tissue are destroyed, as shown in the center of this illustration, under certain conditions of interstitial gingivitis, especially after the alveolar process has obtained its growth, the bone cells are never reproduced.

Enlargement of the nasal cavity may readily be accomplished by spreading the dental arch by opening the suture at the median line provided ossification has not taken place. Arrest of development of the face, nose, jaws and teeth is due to an unstable nervous system or there may be excess in development, including ridges along the suture. In other words, the suture may ossify at two years; it may remain ununited as late as the

Fig. 8.—Destruction of alveolar process due to pressure and absorption between the roots of two teeth (low power).

thirty-sixth year, or, as sometimes occurs with the suture of the cranium, it may never close. To quote from my previously published work,[3] a passage which refers to the ridges on the suture in the mouth:

> How, then, are deformities to be accounted for? We have seen that these projections are developed as early as the second year and as late as the thirty-sixth year. We are safe in the assurance that they are the result of excessive development of the suture, due to irritation set up at the time of ossification, by mastication, the lower jaw developing laterally faster than the upper, thus crowding the superior maxillary bones apart. I have observed this action in a large number of my patients, one of which I will here describe. A woman, thirty-six years old, had a space between the central incisors of 0.50 of an inch. No space was observed until twenty years of age. The teeth filled the arch and all articulated. The lower jaw continued to develop and the act of mastication carried the superior maxillary bone laterally, widening the suture, the space filling in and producing a ridge.

3. Osseous Deformities of the Head, Face, Jaws and Teeth, 1894, p. 391.

What will occur when early ossification has taken place and the closed suture has been reinforced by hypertrophied bone along the ridge? Will the process of causing inflammation and bone absorption in the alveolar process by pressure in the regulation of teeth extend its influence to bone cells about the nasal cavity? This is a subject for much discussion.

103 State Street.

READJUSTMENT OF THE SUPERIOR MAXILLÆ IN TREATMENT OF HARE-LIP AND CLEFT PALATE

AND THEIR SEPARATION BY DIRECT PRESSURE FOR THE RELIEF OF DEFLECTED NASAL SEPTUM AND CONTRACTED NARES.*

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It would seem safe to assume that nearly all practitioners of medicine will agree on the following points: In cases of deflected nasal septum or contracted nares leading to partial or complete stenosis with the usual associated difficulties of spurs, enlarged turbinal bodies, hypertrophic enlargements of intranasal structures and other factors of similar nasal diseased conditions, with adenoids, enlarged tonsils and mouth-breathing it would be greatly beneficial if more breathing space could be secured and better oxygenation made possible by some means other than complete removal of turbinal bodies, a practice now largely abandoned, as many operative procedures not yet entirely discarded doubtless will be when both their inefficiency to give permanent relief and their postoperative disadvantages are better appreciated.

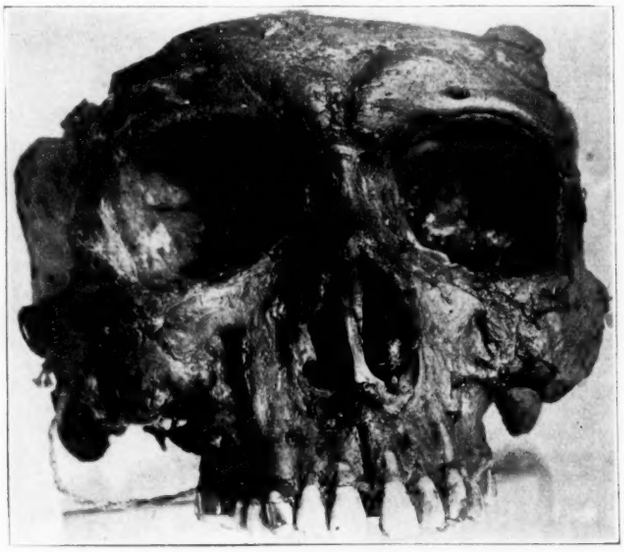


Fig. 1.—Skull, to which was applied author's appliance for correction of intranasal deformity, showing separation of suture.

All, however, are not agreed that this can be done. Even those with whom I have been associated in the correction of such conditions, who know from practical results that these patients can be benefited by extranasal procedures such as I have applied, though agreed as to the effect, have not been entirely in accord as to the manner in which relief is given.

My purpose at this time is, therefore, to explain the method of applying direct pressure in such manner as to separate the upper maxillæ through the median suture. As a result of this operation by separation at the floor of the nose, wider space must be secured; through the forcing apart of the nasal processes of the superior maxillæ on both sides, more or less additional room must be given in the region of the nasal fossæ, and because of their attachment the nasal bones must have tendency to move with the maxillary bones to which they are attached, thus materially increasing the natural air passages throughout. I shall also demonstrate by presentation of cases, photographs and other clinical evidence that not only does actual separation occur, but that the therapeutic benefits are beyond question.

This method, which I had been following some years previously, was definitely reported in 1901 by Dr. Nelson M. Black of Milwaukee, on whose patients I had successfully performed expansion of the maxillæ in this way for the relief of aural and nasal affections. On other occasions I have claimed originality for the idea of expanding the dental arches in this way for the definite purpose of producing this result. So far as I have been able to learn, it was never before done for that purpose, notwithstanding the fact that nearly all dentists at various times in their orthodontic experiences have noted separation of the central incisors as herein described with more or less alarm but without definite understanding of the possible therapeutic value of properly producing that separation.

Fig. 3.—Patient in whom the nasal septum was so buckled as to produce almost complete stenosis of the nares.

There has been among rhinologists generally more or less failure to understand just how this should be done; in many instances reference of cases to dentists for expansion of the dental arch by the methods of modern orthodontia has not given satisfactory results. Through the courtesy of Dr. Lee W. Dean of the University of Iowa I have been able to perform the same operation on the skulls of fresh cadavers, one of which is illustrated in Figures 1 and 2, showing conditions

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

just as produced for patients with the median suture separated and the nares expanded as described. For these reasons it seemed well to place the whole matter definitely on record and to add thereto some additional clinical evidence of practical therapeutic benefits accomplished thereby.

CAUSES OF HARE-LIP, CLEFT PALATE, ETC.

It has become apparent to me through study of the grosser deformities of hare-lip and cleft palate and the effect on the development of the nasal septum and other intranasal structures of maldirected force expressed through abnormal muscular action and unnatural breathing, as well as arrested development and consequent malformations due to early compression of the maxillæ of such infants in efforts to close the palate, and other factors leading to increase or decrease of deformity which are, as might be expected, more apparent in these extremely marked types of asymmetrical development, that by rearrangement of the superior maxillæ much might be done that could not otherwise be so well accomplished.

Whatever the etiologic factors may be or however well explained by rhinologists, the fact remains that with deformities such as deflection of the nasal septum, spurs, and other conditions which bring about partial or complete nasal stenosis, the one great desideratum in attempting cure is larger breathing space, more room and insufficient oxygenation. Some authors have associated these defects and given heredity full credit for all the ills that are thus associated, to the complete exclusion of factors such as imperfect physiologic respiratory effect, abnormal muscular action, and the other influences directing or misdirecting developmental processes. In short, many theories, all more or less correct, but each in itself insufficient to cover all these conditions, have been advanced, accounting for other abnormalities under discussion by causes ranging from thumb-sucking and accidental injury to the more complicated embryologic and physiologic factors.

A careful scrutiny of nearly all such patients will usually reveal other features and sometimes remote parts of the body unequally or at least asymmetrically developed. These, therefore, could not result from any of the etiologic factors that apply only to local conditions, and some general law governing a tendency to irregular cell development must be accountable as a first factor in nearly every instance.

Adenoid vegetations are usually, and would appear to be almost necessarily, associated with mouth-breathing and imperfectly developed nares. Yet the fact which I have previously noted in former papers, namely, that in individuals with cleft palate, even those with wide fissures throughout, one quite commonly finds masses of adenoids and tonsils much enlarged, demonstrates that

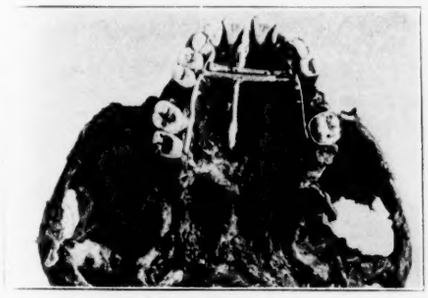


Fig. 2.—Same skull as in Fig. 1, showing appliance in position, palate suture apart.

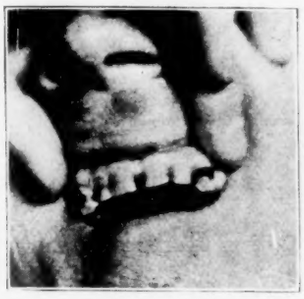


Fig. 4.—Showing space between central incisors which was produced in patient shown in Fig. 3, after wearing appliance two weeks.

Fig. 5.—Separation of central incisors in another patient brought about by wearing appliance approximately two weeks.

for the oxygenation on which healthfulness of the more or less hypertrophied tissues depends.

Although my present intention is to explain readjustment of the superior maxillæ in relation to the surgical and therapeutic possibilities of such treatment, and questions regarding the etiology of nasal and pharyngeal deformities have, therefore, not been entered into, there is, nevertheless, one general feature with reference to the literature of these subjects taken in a general way that does seem to require notice as being in line with a complete understanding of the requirements which demand the remedial measures here recommended.

Many authors in this country and in Europe have devoted much space to causal factors of deviated nasal septum, and deformities, such as adenoids, enlarged tonsils, crowded dental arches, dental irregularities, and other abnormal conditions in these regions, which are so frequently found in the same individuals.

The dental irregularities and high, narrow palatal vaults have been ascribed to the adenoid vegetations and nasal defects which caused mouth-breathing; again, the adenoids and enlarged tonsils have been laid at the door of the dental irregularity, or the adenoid vegetations have been ascribed entirely to want of nasal breathing in such cases at least restriction of the nasal space did not cause the vegetations.

On the other hand, the effect of muscular action in mouth-breathing, thumb-sucking and other habits of this character can not be denied or ignored, any more than one could say that hard labor would not show its effect on the shape of the hands, or that an organ or part of the body would not atrophy from disuse and become larger and stronger by exercise.

METHODS OF CORRECTING INTRANASAL DEFORMITIES

The various operations for the correction of the intranasal deformities, such as the Asche operation, the so-called window operation as practiced by Freer and others, removal of spurs, etc., while frequently successful in skilful hands in giving some measure of relief, are, nevertheless, somewhat limited in their usefulness. There seems to be no room to deny the statement that if the external walls of the nares can be moved apart to the end that the breathing space may be thus enlarged and this by sufficiently harmless methods, the result would be one greatly to be desired and highly beneficial. This I have been doing for a number of years.

Through application of a force at once simple, direct and effective, we are able to get a prompt and positive result. The appliance used as shown in the illustrations consists of bands attached to the cuspids and molar teeth on each side so joined that when a bar with screw and nut is attached across the palate in the bicuspid region, the force applied by turning the nut will cause pressure against all of the teeth on each side of the dental arch. With pressure applied so gently that there is no pain and but little inconvenience experienced by the patient, it is possible in all young persons (and the illustrations here given show that it is also practicable in older ones) to force the maxillæ apart by separation of the median suture extending between the central incisor teeth and on through the central portion of the hard palate.

Evidence of this is given by the fact that the central incisors are moved apart without attachment or direct pressure of any kind being applied to these teeth.

So easily is this accomplished that members of the patient's family usually turn the nut at home, and it frequently happens that from the time of the insertion of the appliance until the separation is complete I never see patients who live at a long distance from me.

With the separation of the superior maxillæ in this manner, as might naturally be expected, the nasal processes and the nasal bones through their points of attachment are moved with them, thus giving a direct and immediate increase of space within the nares.

Fig. 6.—Faulty result from attempting to close the palate and the lip at the same sitting in a case of harelip and cleft palate.

Fig. 7.—Same patient as in Fig. 6, after closing lip fissure.

Fig. 8.—Cast of mouth of a girl of 14 in whom early operation for cleft palate caused the result shown.

With many dentists, particularly orthodontists, it is a common practice to enlarge the upper dental arch in the correction of dental irregularities and much benefit to the nose as well as mouth is usually accomplished, but with all appliances commonly used by dentists the pressure is chiefly applied in such manner as to cause an osteoclastic absorption of surrounding bone. This has been clearly demonstrated by Talbot in his experiments on dogs, on the teeth of which he placed regulating appliances, and later examined microscopically sections of their jaws and teeth after pressure had been applied for a sufficient time. To get the best results, however, this osteoclastic absorption is exactly what should not take place. By immediate and direct pressure as given by the appliance that I have devised, through marked resistance of the more rigid portions of the superior maxillary bones in the region of the malar processes, just the right counter-force is applied to make the effect extend into the higher regions between the maxillæ.

RESULTS

Direct proof of this is given in many ways. For example, in the skull shown in Figures 1 and 2 the diameter across the base of the nose, between points marked and measured before applying pressure, increased one-eighth of an inch, and across the upper third of the nose one-sixteenth of an inch.

Figure 3 shows a young man, aged 29, whose nose was injured by a baseball in early youth. A rhinologist, Dr. Nelson M. Black, by whom the patient was referred to me, found the septum buckled in such a manner as to give almost complete stenosis of one naris, the turbinal bodies much enlarged, and hypertrophic conditions generally marked. The patient was greatly troubled by attacks of sneezing when he bent his head downward.

The appliance was adjusted April 6, 1908: within two weeks the space between the central incisors appeared as shown in Figure 4. Actual enlargement of the nares was confirmed on examination by Dr. Black, and by the improved breathing experienced on the part of the patient himself, thus proving that even at this patient's age the desired result had been quickly accomplished.

Most of the time the patient, who resides in another city, was at a distance from me, and the turning of the appliance was done by one of the members of his family.

Figure 5 shows a young man of 21 whose central incisors show the same separation, and for whom the maxillæ were parted, with marked improvement in the nasal width in approximately two weeks' time. The other illustrations are of patients referred to me by rhinologists, in all of whom the desired nasal space was secured promptly. To these might be added a long list of other patients who have received the same treatment with precisely the same result in my practice during the past few years if repetition by citation of other cases were either necessary or advisable.

All these cases show a greater or less amount of deviation of the nose from the central facial line, an imaginary, though clinically a very useful line, to which I have previously called attention, taken through center of forehead, tip of nose and center of chin. Deviation from this line, one way or another, is almost certain indication of perverted nasal and maxillary growth, leading almost invariably to pathologic nasal conditions.

Especially among growing children treated by this method has there been marked physical improvement, tendency to growth in height as well as general development, and increase in weight. Many of these had previously been unable to attend school regularly because of the tendency to affections of the nose, throat and bronchial tubes.

Nervousness was almost invariably very greatly relieved, and this, it is believed, for two reasons: 1, the well understood results from the improvement in breathing apparatus with the general healthfulness to be expected from better aeration and freedom from diseased nasal secretions, and, 2, the relief of that condition to which Kiernan has called attention, caused by crowding together of the dental arches with tendency to nerve irritation.

This condition quite frequently manifests itself, not only in increased nervousness of a general character, but also in the development of neurotic tendencies leading to chorea, epilepsy and other similar affections, which in some instances at least might perhaps have been averted if these patients could have been tided over critical periods in their development. This has been recognized by Dr. Talbot as one of the periods of stress.

Certainly it is a curious fact that even with the disadvantage of having the appliance in their mouths and the bar across the palate, children who are subject to such pathologic conditions almost immediately become less nervous, have increased appetites, and general development goes forward almost from the very first few days after pressure has begun to be exerted.

I can not help feeling that this treatment can be made a very great factor in safeguarding against tuberculosis. It is so easily accomplished and the results are so greatly beneficial that it should be applied to the hundreds and thousands of growing children who are unquestionably more susceptible to pneumonic and bronchial affections because of imperfect breathing. It offers a possibility of relief which is especially important on account of the fact that such defects are well known to be on the increase, arrested development in the maxillary region being more marked in each generation under the conditions of our so-called civilization. The principles on which this treatment rests are based on and verified by a study of the development in embryo of those structures which ultimately develop into the bones of the nose and face and the dental organs. Sections taken through the heads of human embryos at important periods, from the fifth week until birth, and a further study of development in this region until the fourth or fifth year discloses the fact that in an early embryonic period the germs of both permanent and temporary sets of teeth are in course of development. It is beyond question that any restriction in the region of the palate and alveolar structures must cause crowding in the direction of least resistance, which is necessarily at the expense of the nares. Therefore, proper treatment must be relief by expansion in this region.

When through arrested development the palate and maxillary bones fail to unite, resulting in the development of hare-lip and cleft palate, adverse, uncontrolled muscular action causes disarrangement and spreading apart, which must receive attention in order to give symmetrical form to the nose, mouth and palate, as well as functional results in breathing and speaking, the application of force in the opposite direction to that required for the foregoing class is needed, for compression is necessary. The methods I employ for this purpose have been described in my former articles.[1]

As might also be expected when the method is followed of treating infants with hare-lip and cleft palate in early infancy by forcing the sides of the fissure together and the use of wires placed through the jaws with lead plates to hold them in position, the result must inevitably be deformity through narrowing of the nares, fixation of the maxillary bones in malposition, destruction of erupting teeth and, through their failure to erupt, arrested or imperfect development of the mouth, nose and lower part of the face.

An example of the ill results which sometimes follow this treatment is shown herewith in Figure 6. The patient was a little girl of 3 years old, on whom operation had been performed in early infancy according to the method above referred to, the maxillæ being forced together in an attempt to close the palate and the lip closed at the same sitting. The result was that the palate operation failed, except that a small portion of the tissues united sufficiently to hold the parts in their abnormal relation, as evidenced by the picture, and sloughing of the lip resulted in the loss of lip structure from the cartilaginous wing of the nose to the angle of the mouth on the affected side. Figure 7 shows the same little girl after I had closed the lip fissure. This picture makes apparent the fact that, though the lip itself looks fairly well, the deformed condition of one side of the nose can never be wholly overcome.

I have previously illustrated similar cases in the articles above referred to and in other publications. During the past year I have had a number of patients brought to me for correction of similar results of the same kind of maltreatment in early infancy. The unfortunate part of it is that patients of this kind in whom results seem to be quite satisfactory at the time of the operation in infancy, as development proceeds, will look even worse than those illustrated, because, as the children become older their correction is much more difficult. Figure 8 shows a cast of the mouth of a girl of 14 in whom early infancy operations for cleft palate have caused the result shown.

SUMMARY

In otherwise normal cases the maxillæ should be separated to improve contracted nasal conditions, and the earlier this may be done the better the result.

In infants with hare-lip and cleft palate, the parts should be readjusted by gradual methods, care being used not to disarrange more than may be absolutely necessary those structures, which, though invisible, are nevertheless in course of development.

In cases in which very wide fissure actually exists the width of the fissure should be reduced and the form of the palate corrected before plastic operation for closure is attempted.

It appears to be quite impossible for one to overestimate the benefit to the general health and development of growing children, could they be thus cared for at a sufficiently early date. In the war against tuberculosis, treatment of this character is unquestionably destined to be a factor quite worth consideration.

445 Milwaukee Street.

1. A System for the Surgical Correction of Harelip and Cleft Palate, THE JOURNAL A. M. A., March 18, 1905, xliv, 848; Conservatism in the Treatment of Infants with Harelip and Cleft Palate, THE JOURNAL A. M. A., March 2, 1907, xlviii, 754.

ABSTRACT OF DISCUSSION*

ON PAPERS OF DRS. DEAN, TALBOT, BLACK AND BROWN

DR. NELSON M. BLACK, Milwaukee: My paper referred especially to the widening of the upper maxilla in cases of deflected septum, after which widening there is decided straightening of the septum. After the jaw is widened, either from resiliency of the septum or from the relief of tension consequent to lowering of the vault the septum is forced in between the suture or space, and to a large extent helps to hold the two arches of the palate apart. In cases in which this operation is done for deflected septums, a retaining appliance does not appear to be as necessary, or, if worn at all, is worn for a much shorter period, with the continued good benefit that is brought about by the widening of the maxilla. So the septum either must spring down between the two halves of the palate and hold these apart, or else besides a lowering of the vault and the resiliency of the septum which tends to hold the tissue separated, there is a new disposition of bony tissue which keeps the widened maxilla in its position; for with the result once accomplished I have never seen the deformity recur.

DR. JAMES E. POWER: In the cases in which the separation is as marked as in the skull just exhibited, what ultimately becomes of that space brought about by the separation? Does tissue form in there, and if so, what kind of tissue? Does it finally become cartilaginous or bony? Dr. Black partially explains this by the dropping of the arch after the palate bones have been separated; but if this theory is not accepted, what ultimately fills that space? In a case of separation when the teeth are all present, I can accept the opinion that the teeth may find their normal position, or a new position; but in the cases in which teeth have been extracted and the full number of teeth not present, then it seems to me without knowing all about this particular operation, that the teeth would have a tendency to move backward.

DR. VIDA A. LATHAM, Chicago: I am glad that our section has tried to force the general medical profession to recognize the desirability of joint work on the part of rhinologists and stomatologists. Dentists should be associated with rhinologists in widening the arches in cases that require it.

I do not think it wise to operate on adenoid tissue with a cautery, for every one knows that to treat a burn is far worse than ordinary incision; because of the sloughing, the danger of infection and of hyperplasia or hypertrophy which only gives a return of the conditions that we are trying to get rid of—an excess of adenoid tissue. At what age do adenoids (hyperplasia and hypertrophy) begin to show themselves? Some state that the very earliest is four or five years. I think that there is a likelihood of those conditions appearing much earlier. I have seen cases in which the palate was well developed, with good respiration, and the adenoids have recurred after being removed by specialists. So it seems that there is an unknown factor at work. What produces adenoids and why do they recur?

Does the condition of deflected septum always come from deformity of the jaws? There are cases of deformity in which deflected septum is not present. There is sometimes an inclination to stenosis of one side of the nose of the fetus three months *in utero*. So although the statement is made that adenoids occur only at two to four years, it seems rather late for us to begin to correct the condition. I take issue on the question of obstetric forces. Unless we can consider the matter of a normal position in obstetric work, I can not see how accouchement forcé can possibly produce those defects. Why? Because the time of delivery is short in comparison with the length of time the fetus has been developing. In the Bohemian and Lithuanian districts, there is notoriously difficult obstetric work. One would think the general difficulty of delivery would produce the most awful deformities, but they do not often result. Sometimes it seems impossible that the brain will ever recover, but generally it does.

Are calcified jaws really ossified so as to be firm at birth? I should say no, because there is not a case in which the jaw will not slip forward and back again and retain its shape. I think that, as Dr. Talbot says, there is some indication that the position of the fetus might have something to do with it. Given the deformed pelvis in these rachitic or osteomalacia cases, in which the child's head is bent on the chest or under the arm, then, and only then, by pressure previous to birth could those difficulties occur.

In treatment I do not think it is sufficient to apply a band or brace, without looking to the occlusion. I have models taken from a patient treated through the suggestion of Dr. Brown, who recovered with his theory of less orthodontia. This patient was abnormally developed; his teeth were locked, the anterior teeth protruded very much. That man, on having the separating bar and screw in, jumped his bite and the jaws went back, securing almost normal occlusion and he is much better. The uvula was about three inches long and reached into the throat, making him cough most of the time. In this case it would not have sufficed merely to bring down the palate, unless some method of exercise had been put into execution. It is a good plan in these cases to put a patient, with the mouth shut, under military treatment and the exercise of slowly climbing hills. At first he can go only a few steps up-hill without trouble in breathing, but after he has done it twice a day for a time, going slowly up, breathing with the mouth shut, you would be surprised how the bringing in of oxygen helps such a case of deflected septum. I believe that methods of exercise should be considered with the method of regulations. When do these deflected septums occur, and how can the submucous resection of the jaws help those cases the filling in of bone?

DR. EUGENE S. TALBOT, Chicago: A point of great interest to the rhinologist and to the dentist is the widening of the nasal cavity. There is a law governing development, and if that law be understood, it is easily seen how the suture develops. We have been speaking of arrests of development, but we must also bear in mind the fact that there is frequently excessive development. Patients are often seen who have spaces between the permanent central incisors. Dentists believe these spaces due to the frenum of the lip, no doubt, because it is located at that point. But the frenum has nothing to do with it; it is simply lateral overdevelopment of the upper jaw; the jaw continues growing. Often when there is arrest of development of the upper jaw, the lower jaw develops normally, because the former is movable, and more blood is carried to it on account of its mobility, while the upper jaw is fixed. When there is an unstable nervous system the lower jaw will carry the upper jaw outward laterally by force of the articulation, and this suture develops abnormally wide and connects the two bones together in a firm mass. The same law holds true with hypertrophy of the fissure. I have demonstrated by illustrations this excessive development taking place at the second year; that is, there is hypertrophy of the suture. Hypertrophy of the suture in the vault of the mouth is just as liable to occur as arrest of development, although it is not seen so often; more frequently there is an arrest of development of this suture, and that is favorable to the work Dr. Brown has brought before us.

When appliances are used to separate the maxillary bones it is simply a matter of how much pressure can be brought to bear on the teeth. If sufficient pressure be exerted to open that suture, when it is undeveloped, when the arches have not united, or when there is hypertrophy, then we shall accomplish what we wish. If, however, we have hypertrophy of the suture, and are unable to move the lateral halves of the bone apart, it is difficult for me to understand how the nasal cavity is to be enlarged. I can conceive of such cases.

I have been asked what the material is that fills in that space. It is nothing more or less than an osseous formation. How quickly that will be formed depends on the nervous system. I can see very readily that the suture might close with

* Because of lack of space, part of this discussion, including the illustrations, is omitted. The full discussion with illustrations and with the complete text of the five articles by Drs. Dean, Talbot, Black and Brown appear in a reprint, a copy of which will be sent by the American Medical Association on receipt of four cents in stamps.

* The papers of Drs. Dean and Black appeared in THE JOURNAL last week.

new bone and hold the lateral halves in place in connection with the inferior maxilla within a few months. On the other hand, I can conceive of opening up that suture and never having it unite. I have seen such cases. Of course, they are rare. I have published a report of a case of suture in the temporal bone remaining ununited. It is not uncommon to find in degenerates an arrest of development of the suture of the frontal bone. There is a case recorded ("Osseous Deformities of the Head, Face, Jaws and Teeth") of lack of union of the superior maxillary bones at the thirty-sixth year.

DR. E. A. BOGUE, New York: Dr. Léopold Chasreau asserts that he has operated at birth for adenoids in fifty cases. I took occasion to inquire very carefully at four children's hospitals in New York about the age at which adenoids appear. The physicians at the Sloane Maternity Hospital said that they had not in five years had a single case of adenoids in children under 3 years of age. Perhaps they had not observed them. The mother of one of my own little patients says that her daughter had them at nine months. It seems to me that the tonsillar ring may be mistaken for adenoids. There are present in that only the elements of what may later become adenoids. Adenoids are pathologic and tonsils are not.

DR. STEWART L. MCCURDY, Pittsburg, Pa.: In the study of the development of tissue and the deformities of the extremities as orthopedic surgeons have changed entirely around from the original theory that pressure produces atrophy. This has come about since the deduction from the work of Wolff in 1892, known and accepted now as Wolff's law, that under pressure tissue develops rather than atrophies. This law applies to bow-leg and knock-knee. Bow-leg in children depends entirely on the weight that the legs carry originally. I have seen as many as five cases in one family and I have operated in one day at the clinic in Pittsburg seven cases of bow-leg or knock-knee in Italian and negro children. Yet how many cases do you see of bow-legs in adults? We do not operate in all these cases. Comparatively rarely do such patients come to us for correction; yet Nature herself rectifies those deformities because of the demand that is made on the tissue. As the bone develops, the tibia and fibula or the femur, the tendency is for it to develop in straight lines. These deformed bones will, therefore, rectified without any treatment at all, because as the epiphyses unite with the shafts of the bones the limbs become straightened. So we should, I believe, take this factor into consideration in studying the deformities of the face.

I am impressed with the advantage of the operation of Dr. Brown, because when he separates the maxilla there is a space left between these bones that is in proportion to the extent of space that is left between the teeth. If the piers of a bridge are moved apart and just the same amount of material used to reach across from one pier to another, the result must necessarily be an arch with less circumference. So if there is a very high arch before the separation is made, after separation the arch is lessened in circumference; it is brought down, and thus the material reaches across. The spreading of the maxilla causes the arch to drop down, and as it does so the septum will spread out to reach the same position. The tendency is, then, to develop in straight lines and to fill these spaces that are left.

Permanent deformity resulting from parturition is rare. I saw a case of permanent dislocation of one-half of the frontal bone, about four months after birth, and nothing could be done at that late time. In the practice of obstetrics we see great distortion of the skull immediately after birth, but my advice is not to try to reshape these heads; allow Nature to do this, which she always does, and there will probably not be any permanent deformity. I have operated on a number of cleft palates. In these cases there is a lack of material. The material was sufficient originally, but was not adjusted properly, and that results in a defect or cleft. We sometimes have this condition in the anterior surface of the bladder, and the same condition exists in spina bifida. In the latter case we can not, of course, bring the laminæ of the vertebræ together, because apparently the material present is not sufficient, but the soft tissues can be united with strong sutures, thereby making complete closure.

DR. G. V. I. BROWN, Milwaukee, Wis.: The common idea as expressed by one school of orthodontia is that malocclusion is the chief factor. I believe fully in that when malocclusion exists, but in order to have malocclusion there must be teeth to be occluded; in other words, the teeth must have erupted to the point at which there can be occlusion. Unless something disarranged those teeth from their natural position, they would meet in normal occlusion. Therefore, malocclusion is only a secondary factor. Perhaps the primary factor is early loss of teeth, but more often it is something which disarranged the developing teeth so that they developed in wrong positions. From that time on, when the occluding surfaces of the crowns can meet, then, of course, we can not avoid the fact that occlusion must be considered in everything done.

I believe that perhaps 75 per cent. of the orthodontia that is practiced would not be necessary if we would give plenty of room to the teeth. The natural thing for teeth to do when not locked is to come in in proper form if they have room to do it; if they have not room, they can not. The cases in which these separations occur do not keep the separation at all—the incisors move over together; many times when the incisors are in marked protrusion they will drop back quite naturally into almost the perfect form of the arch without being drawn back. I believe that retrusion on those projecting teeth ought to be applied very carefully, and certainly not until they have done all that they will do for themselves and which they have a natural tendency to do in every case. The appliance put in prevents the bones also from returning to their first position afterward. This appliance may be left on as long as may be necessary. Most people do not like to have it in so long, and in those cases we remove it and the very same day put back a very much simpler appliance, a hard rubber plate that goes over the palate, carefully cut to fit the lingual surfaces of the teeth. With that, people can be sent away to any part of the country; you do not have to bother with them any more because you know that the jaws will be held in the same position as when the first appliance was taken off. The patient is instructed to continue wearing it until it can be taken out over night without noticeable effect, and then left out for longer periods without the plate feeling tighter when reinserted. For young people, who would be likely to take the plate out and keep it out, I prefer to have a fixed appliance that will remain permanently, but I find that the more I leave these teeth free to find their own proper places, except in a direction I do not want them to go, the better result I get and the more quickly they find the position in which they will be comfortably retained. That is why I like the simple plate which only touches the lingual surfaces and leaves them free. When there is expansion sufficient to give the proper breathing space and to make the upper arch as it should be, then if the lower arch is not in right proportion it must also be expanded, and in most of these cases we have had the lower arch expanded in order to keep the upper one in place.

Clinical Notes

A NEW SAMPLE SPUTUM BOX

CHASE P. AMBLER, M.D.
ASHEVILLE, N. C.

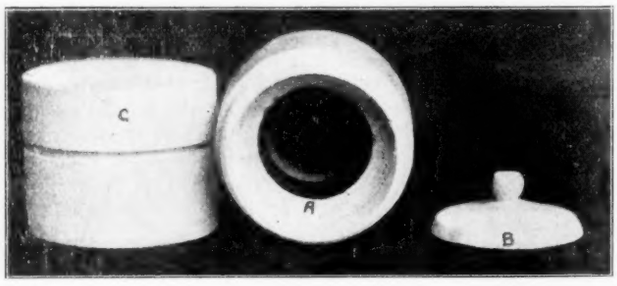
To those who make microscopic examinations of sputum, either in private practice or in general laboratory work, it has all along been a question to secure a satisfactory receptacle in which the sample of sputum could be collected. Bottles, as a rule, are unsatisfactory from the difficulty of getting at their contents. The ordinary screw-top box comes back to the microscopist in such a condition that it is frequently unsafe, and certainly unsanitary, even to attempt to handle it. Moreover, the ordinary screw-top box swells on account of the moisture of the sample getting into the thread

of the box, with the result that the box can frequently be opened only by breaking or splitting the lid.

To obviate these disagreeable features in the ordinary receptacle for securing such samples, I had made, over a year ago, a wooden box which consists of three pieces, as shown in the accompanying photograph. The base has an offset or shoulder at A on which the inside cap B rests, the interior of the base and the bottom of the cap being covered with asphalt, thus rendering the box impervious to moisture and also making a tight joint at the shoulder A. The knob on the top of the cap B projects slightly above the level of the base, thus allowing the cap C (when the top is screwed down on the box) to press on the knob of the inside cap, making a pressure at the shoulder A to insure a perfect joint at this point.

I have had these boxes in daily use for about a year and have found no objection to them since the shape of the cap has been changed and the knob supplied. The box can always be easily unfastened and the inside cap lifted out without soiling the hands.

The cost of these boxes is trifling, as they can be secured in ten-gross lots at $3.25 per gross. The boxes have been made for me (in wood) by E. B. Estes & Sons, New York City.



A new box for samples of sputum.

I am not interested in the manufacture of the boxes, but can recommend them to any one who has met with the annoying and disagreeable features above mentioned in the examination of sputum.

REMOVAL OF A FACIAL NEVUS

T. W. CURRY, A.B., M.D.
STREATOR, ILL.

History.—The patient, K. H., female, domestic, aged 15, had a hairy mole from birth, covering the entire right side of the face and raised above the surrounding skin, growing up into the hair, down along, close to and under the right eye, to within one-half inch of the ala of the nose and corner of the mouth down onto the neck, below the angle of the jaw and over onto the tragus of the right ear. The growth had given rise to no symptoms of any kind, but kept the patient a recluse, in order to avoid comment.

Operation.—This nevus was removed piecemeal, six different operations being performed, at intervals of two weeks. The first consisted in taking away a piece, three inches in width, on the neck over the angle of the jaw, undermining the free flap of skin on the neck, pulling it up and suturing it to the cut edge of the nevus. In the next stage, that part on the forehead was removed and a flap of skin, with the base attached, swung across from the middle of the forehead to cover in the defect. The remainder of the nevus was cut away in four sections, and ordinary Thiersch grafts, taken from the thighs of the patient at the time of operation, were used, the cut surface being thoroughly dried and the grafts placed directly thereon. After none of the operations did the grafts fail to grow, although the little patient could not be kept from talking. There was no suppuration at any time. That part of the nevus below and at the side of the eye was removed with the electric needle, since contraction of the scar and pulling of eyelids was feared if this portion were excised. The original intention of removing the mole *en masse* was later abandoned, for fear the cut edges of skin, retracting, would leave a space too large to cover. The grafts were dressed with gauze, held in place by small strips of adhesive plaster, with gutta percha tissue outside of this. In forty-eight hours, when the dressing was taken down, the gauze was found moist and easily detached from grafts. (Dr. L. L. McArthur, Chicago, gave me this useful suggestion when I was serving under him as an interne in St. Luke's Hospital.) It provides a sterile dressing next the wound, instead of the gutta percha which is difficult to render aseptic. As for the method of erecting a bridge over grafts, it would seem safer to place a dressing directly on so mobile a surface as the face and in this way prevent the grafts from slipping and becoming detached.

Fig. 1.—Patient with facial nevus.

Fig. 2.—Patient after removal of facial nevus. Picture taken one year after that shown in Fig. 1.

Postoperative History.—The patient suffered no ill effects from the repeated short periods of ether anesthesia. She was kept on a liquid diet for four days after operation. For sev-

eral weeks after the work was completed the side of face on which the operation was done presented a bluish tint, but this soon faded out and now is the same color as the opposite side. At present, two years after the operation, there is only a little scarring, no contractures, no disturbance from heat or cold, and the natural expression of the face, when smiling and when in repose, has been preserved.

301 Main Street.

AN EYE BANDAGE AND ITS METHOD OF APPLICATION

G. A. MORLEY, M.D.

CROOKSTON, MINN.

I present herewith illustrations of an eye bandage and its method of application which I have found of great service in my practice. The bandage will remain in position on children and patients who are confined to bed; it is easily removed and reapplied; it is washable, and can be used several times; it is easily made and requires a small amount of material; it is light and cool.

To make the bandage, take a piece of muslin or gauze of desired width, long enough to go around the patient's head, and fold it in such a manner as to cut a hole for the ear equidistant from the ends, as shown in Figure 1. The bandage is then put on the patient with the ear through the opening just made, the distance from ear to nose is measured, and a curved piece is cut out in order not to obstruct the vision of the good eye (Fig. 2).

With a little practice, the length of the oblong opening (Fig. 1) can be judged so that it will be cut of the proper size to permit of the upper part of the bandage to go high on the back of the head and the lower part to go low enough on the neck, as in Figure 3. The position of these strands (Figs. 3 and 4) regulate the staying quality of the bandage; if too far apart, the upper strand will slide forward over the top of the head; if too close together, both strands will slip up or down. Lastly, the tails for tying the bandage should be formed (Figs. 1 and 4).

Fig. 1.—An improved bandage for the eye.

TREATMENT OF VARICOSE ULCERS BY LEGGINGS

J. B. MURPHY, M.D.

CHICAGO

Varicose ulcers, in cases in which operation is refused or inadvisable, or in the smaller type of ulcers in which it is deemed unnecessary, can all be cured by the application of uniform, inelastic pressure from the ankle to the knee. The difficulties heretofore encountered have been, first, to obtain an apparatus which will give this uniform support, and, second, to have one that is convenient and easily applied. For many years I have used silicate of sodium to make a clam-shell cast to fit accurately and produce uniform compression over this entire area. It is put on in antero-posterior, antero-lateral or lateral halves, and as the swelling and edema of the leg recede the edge of the cast can be cut so that the pressure or support of the vessels may not be diminished. The ulcerated area itself should be covered with a strip of gutta-percha paper or oiled silk overlapping it one-half inch on all sides, with no other antiseptic or aseptic dressings. There will be no discharge from this surface on account of the pressure, and the cast may remain for a week or ten days without odor or discomfort from the secretion, as it is a well-recognized fact that granulation tissue firmly compressed gives practically no secretion.

Figs. 2, 3, and 4.—Showing various views of the eye bandage applied.

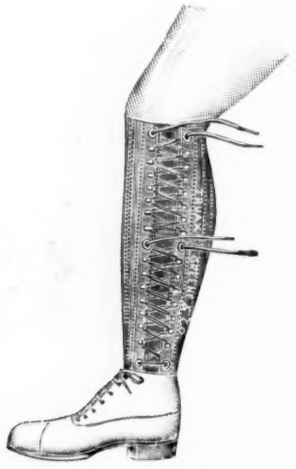
On account of the inconvenience of application and changing of this cast I have devised a "leg corset" or legging that fulfills all the physical requirements of the silicate splint. The pressure can be accurately regulated, and uniform inelastic support is given from the ankle to the knee. It is removed at night, if necessary, and replaced in the morning. The support should not be elastic. The great drawback of the stocking and the Martin bandage is that they are elastic and, therefore, do not give uniform, consistent and continuous support. The corset is made to accurately fit the leg, or is made over a plaster model of the leg, which is the better plan. The ulcer is dressed with a piece of gutta-percha paper overlapping it one-half inch on all sides, the latter covered, if desired, by a larger piece of oiled silk to protect the corset.

The corset or legging I now use is constructed of strong, heavy-grade linen or heavy silk and provided with a double lacer, as shown in the illustration. As the material is non-elastic, this is necessary to adjust the amount of compression accurately and readily at all points. The length of the legging must depend on the requirements of the case. It usually extends from the

ankle to the head of the tibia. It should not, however, include the knee or ankle joints. If it is desirable to encompass the thigh as well as the lower leg, a second legging should be made similar to the first. Light, slender stays of material not affected by water are included in the body of the legging to prevent wrinkling. The tongue or flap is of specially firm material in order to avoid linear constriction, a condition that would otherwise occur when the lacers are tightened. All the material, including the lacers, is washable, thus securing sanitary conditions.

Careful measurements are necessary to obtain ideal results. In ordering from the instrument-maker measurements should be taken and a pen and ink drawing of the limb should be made showing the malleolus and popliteal line when the limb is flexed. The distance from the malleolus to the head of the tibia and popliteal fold should be stated; also the circumference of the limb one inch above the malleolus and at points above this up to and including the garter line at intervals of one inch. To secure accuracy these measurements should be noted on the drawing or chart.

Every varicose ulcer of the leg not involving an area of more than three-fifths of its circumference can be healed with this method without confining the patient



A "leg corset" for treatment of varicose ulcers

to bed long. The mechanical support is so uniform and complete that the evil effect of the varicosity of the veins and the hydrostatic pressure is entirely overcome.

The corset is so light and so readily placed that it is no inconvenience to the patient. The sense of relief from the "leg fatigue" caused by varicose veins is striking. The process of repair of the ulcer is very much hastened. If the lacing line, as indicated in the drawing, comes over the ulcer, then it should be changed to some other position, preferably to the other side of the leg. With this inelastic binder one secures all the advantages formerly obtained with isinglass or silicate of sodium splint, while avoiding many of the disadvantages which the application of the splint entailed.

It will rarely be necessary to have a corset on the lower third of the thigh, and only occasionally is it needed around the foot. When, however, the enlargement of the veins in either of those positions indicates its application the support is made on exactly the same principles as in the corset encasing the leg. There is no elastic support, binder or stocking which favors the process of repair equal to the inelastic variety.

100 State Street.

A NEW CARDIOSCOPE TO BE USED WHILE ADMINISTERING CHLOROFORM OR ETHER*

ARCHIBALD W. ROBERTSON, M.D.
LITCHFIELD, MINN.

The accompanying illustrations show a new cardioscope which is useful in detecting any changes which may take place in the heart action during administration of chloroform or ether.

The disc or phonendoscope is small and flat with a metal tube protruding from one side to which is attached a long firm rubber tube divided by a Y at its

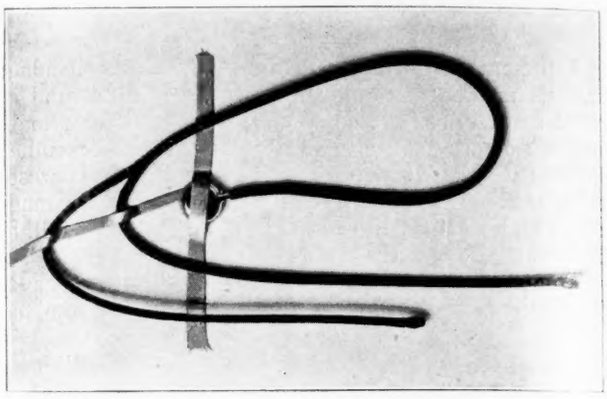


Fig. 1.—New cardioscope.

distal end to connect with the rubber tubes which hold the small ear pieces. The disc is placed directly over that portion of the chest wall where the heart sounds are most distinctly heard and it is held firmly to the skin with a wide strip of adhesive plaster.

The rubber tubing passes backward under the clothing and up to the ears of the anesthetist. The anesthetist at any time can count the pulsations of the heart and at the same time have his two hands free to attend

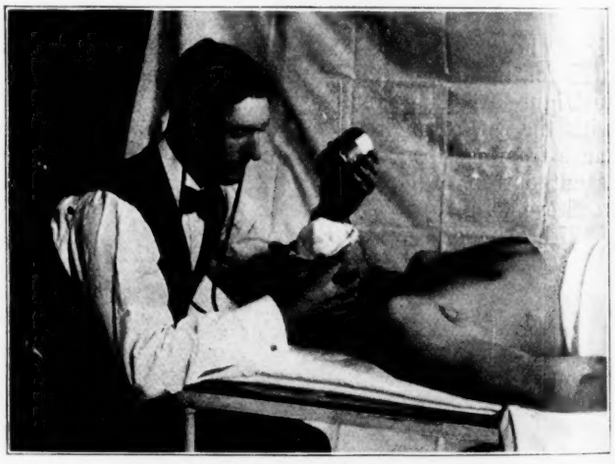


Fig. 2.—The cardioscope in use.

to his duties. The ear pieces are light and can be worn for hours without unusual discomfort and are not pressed against the head by springs as in the older styles of stethoscopes.

This device has been used in the Robertson Hospital, Litchfield, and in office work for some time with satisfactory results, and I think that it is a great aid to the anesthetist.

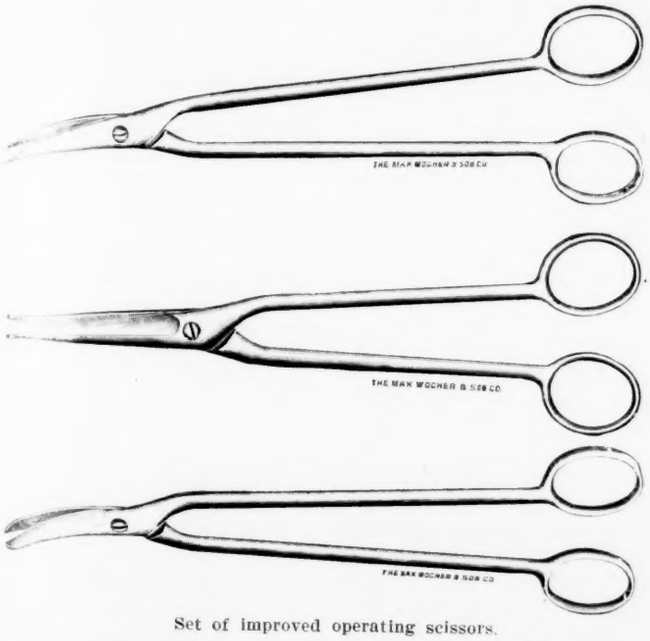
* Exhibited at the Crow River Valley Medical Society.

THREE NEW DESIGNS FOR OPERATING SCISSORS

JACKSON B. TAULBEE, M.D.

JOPLIN, MO.

The accompanying illustrations show a set of operating scissors designed by Dr. W. H. Taulbee, Maysville, Ky., and myself. The straight ones are combined puncture and dilating scissors. They can be obtained with needle or slightly rounded points. They are of special utility in puncturing, incising and dilating in operations for pelvic abscess and other conditions requiring vaginal incision and drainage. The others are, respectively, sharp-pointed and dull-pointed, right and left, curved dissecting and operating scissors. These are adapted to all work in deep cavities, such as the vagina, bladder, uterus, rectum and throat. The handles of each, being separated by a space when the scissors are closed, do not pinch or catch the folds of tissue, mucous membrane or gauze packing, as do those of other scissors; in addition, they may be used to great advantage in deep narrow spaces as retractors



Set of improved operating scissors.

and depressors. The chief advantages common to all three instruments are the spaces between the bars of the handles of each, the length (8½ inches), weight and strength.

311 Wall Street.

BISMUTH POISONING

TWO CASES, WITH ONE FATALITY, FOLLOWING INJECTION OF BISMUTH-VASELIN PASTE

V. C. DAVID, M.D., AND J. R. KAUFFMAN, M.D.

Members of the House Staff of Cook County Hospital

CHICAGO

The injection of bismuth-vaselin paste for the treatment of tuberculous cavities, sinuses and fistulas was introduced by Dr. E. Beck in April, 1908. Its use has been enthusiastically advocated by many and it is now a routine procedure in many of our hospitals. Numerous brilliant results have been reported. The simplicity of the technic, the uncomplicated formula of the mixture, and the painlessness of its administration, appeal to all who have charge of these chronic cases.

At the Cook County Hospital bismuth-vaselin paste has been used extensively, not only for tuberculous cavities and sinuses, but for empyemas, fistulæ in ano, and as bone plugs after mastoid operations, without fear of toxic effect. It is therefore of marked interest to note that in the last four months two cases of bismuth poisoning have occurred following the use of a moderate amount of the paste.

A preliminary report of the cases is made at this time so that it may be more commonly known that toxic effects may result from the use of moderate amounts of bismuth-vaselin paste, and with the hope that conservatism may govern its use until further study establishes more clearly the limit of non-toxic dosage, the manner of its absorption, and the possibility of bismuth idiosyncrasy.

A more detailed report with the laboratory and autopsy findings of the fatal case and the further progress of the convalescent patient will be published later. The analysis of the bismuth used in the paste, and the urinary tests for bismuth, are under the consideration of Dr. Walter S. Haines.

It will be noticed that in both these cases the toxic effects were seemingly produced solely by the bismuth constituent of the subnitrate, no nitrite symptoms (dyspnea, cyanosis, etc.) being observed.

CASE 1.—*Patient.*—W. E., an American, aged 24, single, bookkeeper, entered Cook County Hospital Aug. 31, 1908, on Dr. Ryerson's service. He gave a history of discharging sinuses about the left hip, which had existed since an injury twenty-one years previously. Examination showed an ankylosed hip with healed and discharging sinuses anteriorly and posteriorly. A clinical diagnosis of tuberculous hip was made.

Bismuth Treatment.—On September 8 three ounces of 33⅓ per cent. bismuth-vaselin paste was injected into the sinus on the posterior aspect of the hip. On September 28 a second injection of about six ounces of bismuth paste caused considerable immediate pain to the patient.

Effects of Bismuth.—Pain continued through the night so severe that the patient got scarcely any sleep. On the next day the temperature, which had been normal, rose to 101 F., but returned to 98 in the course of forty-eight hours. The sinus remained open and discharged some pus and small amounts of bismuth paste. Eleven days after the second injection the patient complained, on awakening, of pain in the mouth. From this time on an intense stomatitis rapidly developed. Pain and burning were very severe, and increased so much on attempted mastication and deglutition that the patient took very little of even liquid diet. The gums were swollen and extremely sore. The teeth became loose. A gradually widening, heavy greenish-blue line showed on the gums and on the tip and margins of the tongue. On the left side of the tongue small superficial ulcers appeared, which increased and coalesced until larger than the thumb-nail; the ulcer was covered with a dirty blue-black membrane. The fauces and throat showed the same swollen and pigmented condition. Salivation was constant, intense, and very distressing. Accompanying the stomatitis was some headache and a very marked constipation. The general condition remained fairly good with normal temperature, running to 99 F. only occasionally.

After reaching its height the stomatitis gradually subsided so that at the end of six weeks the ulcerations and salivation had entirely disappeared and the patient was again on regular diet.

The patient complained of continued pain in the hip. An *x*-ray examination showed deposits of bismuth about the joint and a small necrotic focus in the great trochanter, which was removed by operation on December 7. An abscess, which formed in the thigh six days after the operation but which had no demonstrable connection with the operative wound, was

aspirated twice under 2 per cent. cocain and finally freely incised. Large amounts of bloody pus and later masses of reddish discolored paste were discharged.

On December 21, several days after any cocain had been used, the patient, who previously had been quiet and well-mannered, became suddenly rather noisy, restless, and unable to sleep. During the day he was irritable, ugly, abusive to the nurse, and at times irrational. He also became very negligent about his person, showing a complete change in temperament.

At present, five months after the first injection of bismuth paste, the patient's general condition is much improved; the sinus is closed; the abscess nearly healed, and mental condition almost normal. The bluish deposit still remains on the gums in a deep blue line a little more than an eighth of an inch in width, extending to the very margin of the gums. Both the labial and lingual surfaces of the lower jaw are involved; more than those of the upper. Points of teeth contact on lips show blue outlines, especially marked opposite the canines. The tongue-tip and lateral margins extending to the under surface show areas of bluish discoloration, solid to first glance, but made up of punctate spots of bluish deposit slightly larger than a pin-point.

At no time was there any palpitation, dyspnea, cyanosis or dizziness.

CASE 2.—*Patient.*—H. F., well-nourished white man, 21 years old, freight handler, entered Cook County Hospital on the service of Drs. Kahlke and Keyes, Dec. 31, 1908, complaining of lameness and presented a discharging sinus above inner third of right Poupart's ligament. The clinical diagnosis of tuberculous hip was made with some difficulty; but a skiagraph revealed an irregular area on the head of the femur. The patient's temperature varied from 98.6 to 103 for a few days after admission, depending somewhat on amount of pus discharge. Pulse was 80 to 90; respirations, 20.

Bismuth Treatment.—Six ounces of a 33⅓ per cent. bismuth-vaselin paste were injected into the sinus on Jan. 19, 1909; a skiagraph taken on the same day showed the bismuth shadow leading to the diseased head of the femur.

Effects of Bismuth.—Ten days after the injection the patient complained of soreness of his gums and an increased flow of saliva. An examination of the mouth revealed a light greenish-blue discoloration of the gums, linear in character, about one-sixteenth of an inch from the incisor teeth on the lower jaw. The line was composed of pin-point puncta at first, but later became solid. There was increased flow of saliva at this time and subjectively, some nausea and anorexia. The next two days saw a further progress of the stomatitis. The blue line extended over the gums of the lower jaw, involving both the lingual and labial surfaces and remaining a little way from the margin of the teeth and gums. There was also on the lower lip opposite the incisors and especially on the lateral edges of the tongue a distinct blue discoloration of the mucosa, which seemed to follow the configuration of the teeth contiguous to them. At this period the salivation was extreme, the patient lying with his head over the edge of the bed drooling and groaning. His breath was becoming foul and he was taking no diet but liquids and this only when forced on him. His temperature was 98.8 to 99.6; pulse, 80 to 96; respirations, 20. He had some headache and nausea, but no dyspnea, tinnitus aurium, palpitation, or cyanosis of mucous membranes, ears, nose or finger-tips. On February 2 the patient was nauseated and vomited several times. There was then some superficial ulceration on the lateral surface of the tongue and labial mucosa. The blue line had become darker, a grayish blue. There were a few erythemic blotches on neck and face. The patient was restless and did not sleep; took diet with difficulty.

In the following week the stomatitis increased greatly in severity and the general condition of the patient for the first time was bad. The tongue was swollen, about twice the normal size, and showed marked areas of necrosis on the lateral surfaces, corresponding to the teeth imprint, with central gray sloughing area and blue margins. The labial mucosa on lower lip became much pigmented, with irregular areas of superficial necrosis. The gums showed marked necrosis at the junction of the teeth, and the blue line was darker. Blue pigmentation and irregular superficial ulceration appeared on the fauces and right tonsil. The lower lip and face were edematous and salivation was marked. There was some tenderness over the parotid glands but no swelling; moderate cervical adenitis. The patient complained of pain in the mouth and great weakness. Speech was difficult. He groaned constantly; was becoming very emaciated; had no appetite, and was constantly nauseated. He had slight epistaxis once. His breath was putrid. The pulse was weak, 100 to 120; heart, lungs and abdomen negative; temperature, 99 to 100; respirations, 20 to 24.

From this time on the general condition of the patient became progressively worse. Nervous symptoms, as marked restlessness, choreiform movements and insomnia developed. Involuntary defecation and urination supervened. The patient's mentality gradually became less acute and for two days before his death he was constantly irrational and in continuous motion. Decubitus sores developed on sacrum and over hip in spite of every precaution. At the time of his death, twenty-seven days after the injection of the paste and seventeen days from the date of the first toxic symptoms, his tongue was almost twice the normal size and its lateral surface was the seat of ragged dirty blue areas of necrosis which were also present on the lower lip and on almost the entire inner surface of the cheek which came in contact with the teeth. The fauces and tonsils were partially covered with blue pigmentation. The gums of the lower jaw were soggy and ulcerated but still showed the now almost black line. The upper jaw, except on the lingual surface, was not affected at any time to the same extent as the lower jaw. Salivation had ceased. The breath was very foul. The face and lips were swollen. The patient's body was markedly emaciated. Temperature was 104 F. just prior to death, but until a few hours before death had been almost constantly 99 to 100; respirations, 24 to 26, and pulse, 120.

A SKIN REACTION IN CARCINOMA FROM THE SUBCUTANEOUS INJECTION OF HUMAN RED BLOOD CELLS

PRELIMINARY REPORT

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Adjunct Surgeon, Mount Sinai Hospital
NEW YORK

Numerous investigators have shown that if the blood serum of a patient suffering from carcinoma be mixed with normal human red blood cells hemolysis occurs. The reaction takes place in from 50 to 80 per cent. of cases of malignant disease. It occurs with considerable frequency in tuberculosis, and more rarely in other diseases.

It occurred to me that, by the injection of red blood cells under the skin of the carcinoma patient, it might be possible to produce a local reaction at the site of the injection. Logically, a local reaction should take place. Theoretically, such a reaction might prove to be a delicate one; it might give more positive and definite results than the test-tube method. In the technic which is used for the test-tube method the presence and degree of hemolysis is indicated by the amount of laking of the red cells—that is, by the amount of hemoglobin which has been set free. The tube reaction gives no evidence of substances which have been liberated other than the hemoglobin. A small amount of hemolysin in the serum which is being tested might not be capable of detection. If normal human blood cells are injected under the skin of a patient whose serum is hemolytic, fresh quantities of hemolysin would be continually car-

ried to the cells, and, therefore, even a small amount of hemolysin might cause hemolysis of the cells. Every organic substance which was set free would enter the tissues and might there have its effect.

Accordingly, after some experimentation, and with the assistance of Dr. Neuhof and Dr. Geist of the house staff of Mount Sinai Hospital, normal blood was injected under the skin of patients suffering from a carcinoma or other disease. In patients with malignant disease a decided local reaction was observed. The technic employed was a very simple one. Under aseptic precautions, and with a syringe boiled in 0.85 per cent. salt solution, blood was aspirated from the median basilic vein of a normal individual (preferably a child), every possible precaution being taken to ascertain that the individual was healthy and free from hereditary or acquired disease. The blood was defibrinated and the cells washed four times in normal saline solution, care being taken that the washings and centrifugating was thoroughly done. A 20 per cent. emulsion of the red cells in normal saline solution was made and kept in the ice-box for twenty-four to forty-eight hours before it was used. Five minims of this twenty-four to forty-eight-hour old suspension of washed red blood cells were subcutaneously injected into the anterior surface of the forearm of the patient by means of a hypodermic syringe sterilized in normal salt solution. In the patients in whom a "reaction" was obtained the following changes were noted in the skin at the site of the injection: Three to twelve hours after the injection the affected area was slightly raised and slightly tender; it had a more or less well-defined margin; it measured 2 to 4 centimeters, and it was of a somewhat dusky red color. The changes in the skin reached their maximum within one to two hours, and the red area then began to fade, rapidly or slowly. Eight to twenty-four hours after the injection the skin lesion had either entirely disappeared, or, more often, a brownish, bluish or lemon-yellow discoloration remained, which persisted for a number of days.

In the patients who did not show this reaction there was either nothing to be seen at the site of the injection excepting the needle puncture, or a brownish discoloration of the skin, or a bluish discoloration, as is often seen after a hypodermic injection.

My investigations of this cutaneous lesion are very incomplete. I have given thirty-four injections to twenty patients with known carcinoma, and every case had a positive reaction. In most of the patients several injections were given of blood cells from various individuals. With succeeding injections the reaction was often less marked or absent. Of four patients with known sarcoma, three gave a positive reaction. Injections were given to over 100 normal individuals or to those suffering from diseases other than sarcoma or carcinoma. These included a variety of diseases, such as nephritis, tuberculosis of lungs, bladder, kidneys (seven cases), leukemia, syphilis (two cases), benign tumors, acute and chronic inflammatory affections, etc. In all but three cases the reaction was negative. One patient with a septic endocarditis gave a suspicious but not a positive reaction. Two other injections made in this patient were negative. This case was among the earliest of our series, and, therefore, must be accepted with caution. A patient who had been operated on for a large rapidly-growing lymphangioma of the suprapubic region, and who had a large postoperative hematoma of the scrotum, gave a marked positive reaction. A patient with gastric symptoms, absence of hydrochloric acid and presence of lactic acid, with a loss of thirty pounds in weight, gave a positive reaction. The operation failed to show any carcinoma. I obtained no reaction in several patients in whom malignant disease was suspected but in whom no malignant disease was found at operation or at autopsy, and have obtained positive reactions in several patients in whom carcinoma was not suspected but in whom carcinomatous disease was found at operation. Jaundice seemed to have no influence on the appearance of the reaction.

In order to gain a more definite idea of the causation of the skin changes described, normal defibrinated blood was laked with distilled water, and, after the tubes had been centrifuged, the supernatant fluid was injected into a number of patients. For purposes of control, hypodermic injections of sterile distilled water were given. All the patients, whether suffering from malignant disease or not, who received hypodermic injections of laked blood, presented a skin lesion similar to that described as present in carcinoma patients after the injection of washed red blood cells. This seemed to show that in the patients with carcinoma the reaction from the blood cell injection was due to a local hemolysis. In the normal individual or one suffering from some other disease, on the other hand, there was no hemolysis and, therefore, no reaction. When, however, the hemolyzable substances extracted from the red cells by laking were injected, the characteristic local lesions were observed. I have not yet been able to obtain pure human hemoglobin for injection purposes.

A fuller account of the technic employed and a more exact description of the cutaneous lesions observed, of the possible value of red blood cell mixtures, i. e., of suspensions of the mixed red blood cells of several individuals, of the possible value of some animal red blood cells for injection purposes, of the significance of the persistence or disappearance of the reaction after an operation, and many other aspects of the subject will be discussed in a future communication. The number of injections thus far given is far too small to allow of conclusions as to the reliability of this method for diagnostic purposes. The purpose of this preliminary report is to call attention to the fact that it is possible to cause a local reaction in the living body by the subcutaneous injection of washed normal human red blood cells, and that in patients with malignant disease, especially carcinoma, a characteristic and easily recognizable local skin lesion is caused by this injection.

Madison Avenue and Sixty-third Street.

A PRACTICAL METHOD OF DETERMINING THE OPSONIC INDEX*

E. F. McCAMPBELL
COLUMBUS, OHIO

The statement is frequently made by physicians that the technic of the Wright-Douglas vaccine treatment and the determination of the opsonic index is so complicated and burdensome that without a well-equipped laboratory the work can never become practicable.

While experimenting on some phases of opsonic work it occurred to me that some method should be devised to make the determination of the opsonic index available to the physician with limited laboratory facilities.

* From the Bacteriological Laboratory of Ohio State University and the Pathological Laboratory of the Columbus State Hospital.

I have, therefore, devised and investigated the following method, which seems to be very efficient:

A culture of the bacterium to be opsonized is grown on agar-agar, blood serum or some other solid culture media and after incubation at 37 degrees C. for eighteen to twenty-four hours is washed off with a small amount of sterile 0.85 per cent. sodium chlorid and 0.8 per cent. sodium citrate solution.

In place of the regular capillary opsonic pipette the leucocyte counting pipette of a hemocytometer may be used. The bacterial emulsion is drawn up to the mark 0.5, then on up into the bulb. The blood of the patient whose opsonic index is to be determined is then drawn up to the mark 0.5, then on up into the bulb, where it is thoroughly mixed with the bacterial emulsion. The sodium citrate in the bacterial emulsion precipitates the calcium salts and prevents the coagulation of the blood which would occur without greater dilution with salt solution.

When the materials have been mixed the solutions are blown into the capillary portion of the pipette and a strong rubber band placed over the ends lengthwise, thus practically sealing it.

The pipette is now ready for incubation, which may be accomplished in a regular incubator at 37 C., or, if no incubator is available the pipettes may be incubated in the operator's axilla. The pipettes must be frequently rotated. After incubation for fifteen minutes or any desired period the material is blown out on a slide, the smear made and stained with carbo-thionin blue or some other equally good blood and bacterial stain.

The phagocytized bacteria may then be counted, averaged according to the regular methods, compared to a normal slide and the index thus determined.

It would seem from some of the experimental work that the sodium citrate caused a slight reduction in the amount of phagocytosis, probably due to some slight effect on the opsonins. I do not know whether this effect will be noted with all species of bacteria. This point will be determined later, as well as the most efficient concentration of sodium citrate and sodium chlorid combination. The action seems to be constant, however, and does not interfere with comparative tests. The erythrocytes seem to be slightly plasmolyzed by this method, but the leucocytes are unaltered.

By the above method the index may be determined in as short a time as an ordinary blood count can be made. Further results with this method will be reported later.

Therapeutics

ALKALIES

Few drugs are administered more frequently than are the alkalies, and they are often given, and frequently continued, without a perfect understanding of what they do in, and to, the system.

Dr. Eustace Smith, in the *British Medical Journal*, Jan. 30, 1909, opportunely instances the pathologic conditions for which alkalies are administered and the disturbances that their long administration may cause.

In the first place, it would be well to distinguish between antacids or drugs that act as alkalies in the stomach, and alkaline drugs that increase the alkalinity of the blood and tend to render the urine alkaline. The principal antacids are ammonia, chalk, lime water, magnesia, and sodium bicarbonate, while the drugs that are used to render the urine alkaline are, principally and best, the alkaline potassium salts such as the acetate, bicarbonate and citrate.

The antacids taken before meals, if in small doses and properly diluted, act locally to neutralize any stomach acidity that may be present, and are often soothing to an inflamed gastric mucous membrane. Smith advises that the dose of an antacid, if given three times a day, should be small, and that, as soon as it has ceased to be obviously beneficial, it should be discontinued. In large quantities on an empty stomach the antacids tend to increase the secretion of the hydrochloric acid, and if the stomach is stimulated day after day to combat this unnatural alkalinity the result can not be anything but deleterious, and they may cause the secreting glands to become enfeebled. Also if large doses of alkalies are administered they result in an imperfect gastric digestion.

If most alkalies are long continued the alkalinity of the blood is increased, secretions are modified, waste is promoted, and anemia may be the result. Even if the potassium salts are deemed advisable, they should not be too long continued, as a continued alkalinity of the urine is inadvisable on account of its tendency to cause cystitis. In some patients the bladder is very susceptible to the alkaline potassium salts and these individuals have an irritation of the bladder as soon as the urine becomes alkaline. It should also be recognized that, although we may render an acid urine alkaline, we still are often not treating the disturbance that causes the acid condition, and the disturbance may continue although the symptom of hyperacid urine has been changed.

Hyperacidity of the stomach, or hyperchlorhydria, is of frequent occurrence, due to too rapid eating, to the eating of too much meat, to the eating of too highly seasoned foods, to the use of too many irritant condiments, to nervous irritability, to high tension, and to worry. Such hyperacidity is better treated by eliminating, if possible, the cause of the trouble. Temporary relief, however, will always be afforded by the administration of an antacid, and the burning, distress, pyrosis, and flatulence that may be present will all be made immediately better by the administration of 1 gram (15 grains) of bicarbonate of soda. Such treatment is, of course, purely symptomatic. If it is advisable to give bicarbonate of soda, which is perhaps the best of all the antacids, three times a day, before meals, the dose should be smaller, perhaps generally 0.50 gram (7½ grains). It will act, as above stated, as a gastric sedative and will soothe the irritated mucous membrane, will cause a quicker outpouring of the hydrochloric acid, and will thus hasten the completion of the stomach proteid digestion; all of which will tend to make the disturbance and the dyspepsia better, but, unless there is actual inflammation of the stomach, is not treating the cause. If gastritis is present, no one treatment is perhaps more successful than the combination of bismuth and soda, as:

℞.	gm.		
Bismuthi subnitratis	20	or	3v
Sodii bicarbonatis	10		3iiss

M. et fac chartulas, 20.

Sig.: A powder three times a day, before meals.

A glass of hot water taken a half-hour before the meal to wash off the mucus from, and to deplete, the

inflamed gastric mucosa is, of course, excellent treatment.

It is not the purpose of this article to discuss the diet in gastric disturbance. It may be stated, however, that if the antacid is given after a meal the digestion of the starchy foods will go on longer than usual on account of the alkali keeping the contents of the stomach longer alkaline, viz., free hydrochloric acid or a large amount of acid peptones will not so soon be present to inhibit further salivary digestion.

If with the dyspepsia, or gastritis, constipation is present, some magnesium oxid should be added to the above prescription or substituted for the sodium bicarbonate. Also in hyperacidity the precipitated carbonate of lime is used, and is often a most successful treatment.

If an antacid is indicated and diarrhea is present, it is advisable to use lime water.

If an acute hyperacidity is present and there is palpitation or cardiac disturbance, hysterical or other, the aromatic spirits of ammonia is perhaps the best antacid to use.

If for any reason alkalies must be administered for some time, it should be remembered that the sodium salts are better tolerated than the potassium salts, as potassium is depressent to muscles, while sodium is hardly a depressant at all.

If there is diarrhea with tendency to acidity of the intestinal contents, the official Mistura Rhei et Sodæ is often good treatment. Valuable also is the Pulvis Cretæ Aromaticus of the National Formulary, which may be given separately or combined with bismuth.

In combating intestinal acidity the alkalies should be the insoluble ones, of which magnesia is perhaps the best type.

The advisability or necessity for alkalizing the urine is not of very frequent occurrence. The administration of alkalies to render the blood more alkaline does not prevent gouty deposits and does not prevent the formation of uric acid. If the urine is hyperacid, or if there is a uric acid deposit in the urine, the administration of a sufficient amount of alkalies will prevent such deposit and prevent such acidity, but will not prevent the cause of the disturbance. As a solvent for crystalline or other deposits anywhere in the system nothing, perhaps, is better than pure distilled water. On the other hand, it is a fact that many lumbar backaches, with a tendency to the deposit of uric acid crystals in the urine, are made better by the administration of alkalizers of the urine.

When there is a tendency to myalgia or slight pains in the joints, and a physician is consulted, it is rarely that he orders alkalies without also regulating the diet, prescribing baths and exercise, and the drinking of more water. Consequently, it is doubtless rarely that the alkali alone renders the patient better.

In acute inflammations or irritations of the bladder or urethra alkalies should be administered, and generally with the result of modifying the irritation, the frequency of urination, and the pain.

The advantage derived from administering alkalies in sufficient amount to render the urine alkaline in acute rheumatism has not been completely demonstrated. Whether it is possible with alkalies to prevent or modify the cardiac complications is doubtful.

The salts best suited to render the urine alkaline are the salts of potassium, viz., the acetate, the citrate, and bicarbonate, and of these the citrate is the best, the best tasting and the least likely to cause stomach disturbance. The dose should be sufficient to render the urine alkaline, and should ordinarily be at least 2 grams (30 grains) three or four times a day, and more frequently if needed to accomplish the result aimed at. It may be administered in simple water or in an aromatic water, as:

℞.	gm.		
Potassii citratis	40	or	ʒix
Aquæ	200		fl.ʒvi

M. et Sig.: Two teaspoonfuls, in water, three times a day, after meals.

There is no advantage in administering the lithium salts either as antidotes to gout, in gouty concretions or in uricacidemia, and large doses of lithia, or small doses long continued, are very sure to cause gastrointestinal indigestion.

Smith recommends the use of the citrate of sodium in the artificial food of infants. He adds 0.05 or 0.10 gram (1 or 2 grains) of the salt to each ounce of milk, and states that the alkali "joins with the caseinogen, displacing the calcium, while the citric acid unites with the latter base, forming a soluble salt which is absorbed into the circulation." By this method he forms clots that are easy of digestion.

When it is deemed advisable to give the bicarbonate of sodium in dyspepsia Smith advises the addition of a few grains of sodium chlorid to each dose, as "the latter salt has the property not only of aiding metabolism, but also of increasing the vitality and power of resistance of the red corpuscles. It also counteracts the tendency of the bicarbonate to form uric acid concretions."

In acute bronchitis "when the secretion is viscid and thick," Smith suggests the use of the alkalies, either the sodium or potassium salts, as tending "to increase the fluidity of the mucus and thus favor expectoration." He believes that the Liquor Potassæ, in small doses, is the best alkali to select for this purpose.

Smith calls attention to the value of bicarbonate of sodium solutions when applied externally to wounds or other lesions of the skin, such solutions being not only sedative but tending to promote healing.

Alkaline baths are, of course, used frequently to relieve irritation in such skin diseases as "eczema, psoriasis, urticaria, lichen, and prurigo." For this purpose from 5 to 10 ounces of the bicarbonate of sodium are dissolved in an ordinary bath.

For an ulcer that is slow in healing Smith recommends the use of a wash containing 1 gram (15 grains) to 30 c.c. (1 fluid ounce) of water, or a 3.5 per cent. solution. He has "seen large superficial ulcers which have resisted all previous measures begin at once to heal under the use of this simple alkaline dressing."

In whitlow, after the pus has been evacuated, "the bicarbonate of sodium solution, applied on lint under oiled silk, causes the pain and suppuration to disappear with remarkable quickness."

The advantage of the local application to inflamed parts is thought to be due to the raising of the alkalinity of the blood and thus promoting the phagocytic and healing activities of the blood.

Smith recommends the same alkaline wash "for burns, scalds, otorrhea and leucorrhea, and as a gargle in inflammations of the throat and tonsils." Also when there are decayed teeth the pain caused by the acid irritations is immediately stopped by the application of the bicarbonate of sodium solutions.

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SATURDAY, MARCH 27, 1909

THE SYNTHESIS OF PROTEINS

A series of observations which followed one another within a comparatively short space of time led to the inevitable conclusion that the mammalian tissues must possess the power of synthesizing proteins from simple crystalloidal organic compounds. Kossel and Fischer have shown clearly that the enormous protein molecule is merely an aggregation of simpler molecules of definite and known composition, and the former has also found that in some simpler types of proteins, the protamins, the number of different constituent aminoacids present need not be very large—perhaps only four or five. Cohnheim found that the intestinal mucosa contained an enzyme, erepsin, specifically adapted to converting the various products of incomplete digestion of proteins into the elementary aminoacids, apparently for the purpose of reducing all the heterogeneous proteins of our food into their fundamental components in order that the body may again build up, by recombining these components, its own particular sorts of proteins. Abderhalden and Rona and others found that the nitrogenous equilibrium of animals could be maintained by feeding them a diet in which in place of proteins there were substituted the products of proteins digested by trypsin until there was left nothing giving reactions for proteins, or even for peptones and albumoses. This last fact is presumptive evidence that the animal body can build up its tissue proteins from nitrogenous substances much simpler than the proteins, but this was still far from the actual demonstration of such a process accomplished outside the living body.

One direction in which to seek for a possible synthesis of proteins in the laboratory was indicated by the fundamental observation of Croft Hill that enzyme reactions are reversible, and tend always to produce an equilibrium between the processes and products of combination and disintegration. Kastle and Loevenhart particularly brought this reversible reaction into the realm of the body processes by showing that the action of fat-splitting enzymes is reversible and that fatty acids and alcohols may unite under the influence of lipase. A. E. Taylor first accomplished the synthesis of a natural body fat, tri-olein, by the action of a lipase from the castor-oil bean on oleic acid and glycerin. These observations indicated that in all probability the splitting of proteins into aminoacids by enzymes might be a reversible reaction, in which case it should be possible to cause synthesis of proteins by the action of proteolytic enzymes on aminoacids, if only the proper conditions could be found. The earlier attempts to reach the long-sought goal by this route were not successful, if we except the so-called plastein reaction, which consists of the formation of an insoluble protein-like substance when pepsin or trypsin is added to a solution of albumoses.

About two years ago Taylor succeeded better by using the digestion products of one of the simplest known proteins, a protamin from the salmon sperm. The composition of this particular protamin is remarkably simple for a protein, since it seems to contain only four of the different aminoacids, while ordinary proteins contain a dozen or more, and therefore it is particularly suitable for such experiments. Another important element in the success of these experiments seems to have been the use of an enzyme of exceptional stability, a trypsin from the liver of a Pacific coast clam. When this trypsin was allowed to act for a long time on the products of digestion of the protamin there appeared in the solution a small amount of a substance with all the characteristics of the original protamin.

Much more striking, however, are the results which Taylor has just now reported.[1] In these later experiments the aminoacids of the protamin were isolated by chemical methods, thus eliminating the possibility of the presence of any incompletely disintegrated portions of protein molecules, and the free aminoacids were allowed to stand in solution with the trypsin of the clam for four months. At the end of this time it was possible to isolate from the mixture no less than five grams of what seems to have been pure protamin, and which must have been formed through synthetic combination of the aminoacids under the influence of the enzyme. Here we have a definite synthesis of a protein in the laboratory.

To be sure, the protein is one of the simplest known, but none the less a protein. Also, to accomplish the synthesis an essential constituent of living cells, an enzyme, was required to push the synthetic reaction at a rate sufficiently fast so that an appreciable quantity of protein could be obtained, and therefore the process is not entirely removed from the realm of the living. Nevertheless, with our present understanding of enzyme actions, the part played by the enzyme consists merely in hastening a reaction which goes on much more slowly without the presence of enzymes, and, synthesis having been accomplished by the aid of trypsin, there seems to be no fundamental reason why synthesis may not likewise be accomplished without trypsin or any other product or component of living cells taking part in the reaction.

1. Jour. Biol. Chem., February, 1909, page 381; abstracted in this issue, page 1064.

MEDICAL HISTORY AND NON-MEDICAL WRITERS

In medicine, as in other arts and sciences, the men who did things in the past have frequently failed to write accounts of what they did, or else have assumed that their readers must be familiar with the details and the circumstances, and therefore have omitted to describe the latter. The consequence is that there are many distinct gaps in the history of medicine; but, fortunately, these may sometimes be filled out by the chance references of non-medical writers. Some interesting and important facts may be thus secured.

For instance, we generally take it for granted that the clinical teaching of medicine is a modern institution. Even such men as Lancisi in Rome, who seems to have been the first in modern times to gather students around the bedside of patients for educational purposes, and Boerhaave, who first systematized the method, apparently adopted it only in a limited way. That clinical teaching must have been rather common in Rome nearly 2,000 years ago, however, is shown by a famous epigram of Martial,[1] which runs as follows in Witherington's translation:

> Languid I lay, and thou camest, O Symmachus, quickly to see me.
> Quickly thou camest, and with thee a hundred medical students.
> The hundred pawed me all over with hands congealed by the north wind.
> Ague before I had none, but now, by Apollo! I have it.

To take another illustration, Plato long ago said, "The trouble with the physicians in our times is that they pay too much attention to men's bodies and too little to their minds." This appears to be an anticipation of the theory which forms the basis of psychotherapeutics. Petronius Arbiter, in one of his satires, declared that the main business of a physician was "to furnish satisfaction of mind to his patient." Other instances to the same effect might be added showing how the commonplace of the past becomes the vaunted discovery of the present.

Again, many clues to the history of surgical anesthesia may be gathered from the poets and other non-medical writers. Dioscorides, for instance, alludes to the employment of mandragora to produce anesthesia when patients are cut or burnt. Pliny refers to the odor of mandragora as causing sleep if it was taken before cuttings or puncturings, "lest they be felt." Lucian speaks of mandragora as being used before the application of the cautery. In modern literature such references multiply. In the fourteenth century Boccaccio, in the story of Dioneus, describes the effects of an anesthesia mixture which "being drunk would throw a person asleep as long as the doctor judged it necessary." In the fifteenth century William Bullein described a concoction of an herb "which bringeth sleep," and "casteth man into a trance until he shall be cut out of the stone." Du Bartas, in the sixteenth century, described the surgeon as "bringing the patient in a senseless slumber before he put in use his violent engines." At about the beginning of the seventeenth century Thomas Middleton wrote of "the pities of old surgeons who cast one asleep, then cut the diseased part."

These are some of the facts which, too commonplace at the time for the medical writer to mention, were noted and recorded by the layman because of their quality of wonder and novelty to him. They testify that history repeats itself in many respects and that we progress, not along straight lines, but in wavelike alternations of improvement and stagnation or retrogression. They seem to indicate, too, that we have made one probably permanent gain, and that nothing short of a cataclysm can ever break the continuity of medical records in the future. Medical science, like the other sciences, has grown too self-conscious and too careful of her own reputation ever again to leave to the chance layman the task of recording methods and technic.

1. Languebam: sed tu comitatus protinus ad me
Venisti centum, Symmache, discipulis.
Centum me tetigere manus Aquilone gelatæ.
Non habui febrem, Symmache, nunc habeo.

BOVINE TUBERCULOSIS. FAMILY TUBERCULOSIS

The papers on tuberculosis contained in the present issue deal with two phases of the subject, one the relation of human to bovine tuberculosis, the other tuberculous infection within the family. Both have important bearing on the general problem of prevention, and can not be too often or too carefully considered so long as there are dubious points needing elucidation.

Pottenger's views, based on clinical observation of the reaction of patients with different forms of tuberculosis to human and bovine tuberculin, lead him to favor the idea that while both human and bovine bacilli may attack man the bovine bacilli gain a foothold with difficulty, probably on account of differences in the soil. Conversely, human bacilli gain a foothold in cattle with difficulty for the same reasons. In other words, while human and bovine bacilli are closely allied subspecies, which probably originated from a common ancestor, each has lived so long on a particular kind of soil that it develops poorly on any other. All this has been suggested before, and, indeed, this is not the most important part of Pottenger's paper. What is less well recognized is the fact that patients infected with human bacilli react less violently to bovine than to human tuberculin, and *vice versa*. In other words, as maintained by Raw,[1] immunity to human tubercle bacilli may be obtained by inoculating with tuberculin from bovine bacilli as surely as if tuberculin from human bacilli was used, and with much less risk of unduly violent reactions. In the case of gland, joint or meningeal tuberculosis, when due to bovine tubercle bacilli, tuberculin from human bacilli is the safest. The principle is essentially that of using a closely allied and less virulent disease to protect against a more virulent one,

1. THE JOURNAL, Oct. 10, 1908, p. 1259.

as is done in ordinary vaccination against smallpox. In patients with human infection in one organ and bovine in another, one or two instances of which are reported by Pottenger, the matter is complicated, as the bovine tuberculin aggravates the focus of bovine infection while alleviating the human infection. Hess' article is of interest in connection with Pottenger's views, as it not only shows how frequently bovine bacilli are found in the milk of a large city, but also clinically substantiates Pottenger's thesis that infection of human beings with bovine tubercle bacilli is not an easy matter, although long exposure to the infectious agent in the milk makes it possible.

The paper of Miller and Woodruff gives some rather alarming data which should furnish much food for thought to those optimistic individuals who imagine that the stamping out of tuberculosis will be a comparatively easy matter. The first conclusion reached, that over one-half the children of tuberculous parents are infected, when taken in connection with the statement that the parents had not usually recognized that the child was ill, makes it clear that our recent warning[2] that the tuberculous individual must be sought out, was none too emphatic.

While some critics may consider that the criteria which have been adopted by Miller and Woodruff as evidence of tuberculosis are too lax, we believe that in all probability they are strict enough to prove with reasonable certainty that the children regarded as tuberculous were really suffering from the disease. The purely clinical observations of Miller and Woodruff, especially those regarding atypical lung signs, seem to be of great value and should certainly be heeded by the general practitioner.

In the brief course of medical training so much attention is of necessity placed on the typical, that the student—and sometimes the teacher, too, we fear—neglects to recognize the fact that typical symptoms and signs are often but slightly more prevalent than atypical ones. The good diagnostician is the one who can recognize the atypical forms of the common diseases.

A NEWSPAPER OPINION OF THE CAMPAIGN AGAINST TUBERCULOSIS

In these days when there seems to be a wide-spreading distrust of the medical profession — not, indeed, self-originating, but fomented by individuals and cults with axes of their own to grind—and especially when a large section of the newspaper press helps to spread this leaven of distrust, it is, indeed, cheering to read an article such as that in a recent number of the Philadelphia *North American*,[1] entitled "Our Debt to Our Doctors." We can not refrain from quoting the opening sentences:

"During thirty days the *North American* has watched a splendid humanitarian experiment. With constantly increasing admiration we have observed the effect on all classes of this city's people of the International Tuberculosis Exhibition. And our well-considered estimate of the result is that to-morrow and a hundred years hence alike this community will owe a debt of gratitude to the unselfish and devoted men of the medical profession of Philadelphia who made possible this achievement of education and civilization. Figures are eloquent sometimes. When the nature of the exhibit is recalled, it is interesting to note that on one day alone, last Sunday, 37,728 persons crowded into the building, and that the total attendance since the show opened, on February 15, reached 500,000 in round numbers, or fully one-third of the city's population."

After describing the wonderful work of the tuberculosis exhibition the *North American* adds: "It was made possible by a group of physicians who asked for no city appropriation, but went here and there among public-spirited men, explained their plans and, asking favors that they would not for themselves, obtained private subscriptions enough to bring the exhibit to Philadelphia."

From this the paper passes on to make the following appreciative remarks concerning the medical profession in general:

"Except when they have themselves an ache or pain most men and women are prone to ridicule and decry our doctors and their pills and their bills. . . . They are a constant target for the cheap wit. It is not only that these gifted men whose time means more than that of other men, because it means not only money, but the rest of which they are constantly deprived by being at the patient's call at any hour of the day or night, sacrificed much of their precious time throughout a month by their readiness to aid with educational addresses and other unpaid work. Back of all lies the fact that these men were striving in the highest spirit of humanitarian unselfishness to bring about a condition of general health which is bound to mean a pecuniary detriment to themselves. Every doctor who helps to promote hygiene and preventive medicine is helping to reduce disease. And in like ratio the earnings of the physicians would seem likely to decrease. Yet we find the ablest and best of them working in unison in a way that should convince the most flippant scoffer that they have the true conception of the noblest of callings."

While we may not linger over such an inspiriting appreciation of our work, it comes as grateful as a draught of water to the parched throats of those engaged in stemming a conflagration; for the work of the medical profession in fighting the conflagration of preventable disease calls also for unrelaxing effort, regardless of personal inconvenience and consequences, until the flames be subdued.

2. THE JOURNAL, Feb. 20, 1909, p. 639.
1. March 16, 1909.

OPIUM TRAFFIC SUPPRESSION

The press dispatches from Shanghai announce that the international opium commission has practically concluded its work. It was almost a foregone conclusion that the resolutions it adopted should be all one way, the evidences of the evils of the opium traffic have been so self-evident in recent literature. While the evil of opium smoking is apparently greatest in China, we have the testimony of missionaries and other non-official witnesses, as well as the inferential evidence from such literature as Kipling's "Gate of a Hundred Sorrows," that it is an evil appreciated by disinterested observers in India. In the second resolution the commission finds, in agreement with American observers in the Philippines, that the use of opium is not confined to smoking alone, as the morphin habit shows signs of spreading and should be checked. The recommendation that the various governments holding concessions or settlements in China should close the opium dens within their limits will test the sincerity of the European powers more directly than perhaps anything else. That it is within their ability to do so can not be doubted, but their inclination may perhaps be questioned. If the chief offender, Great Britain, can not be induced to adopt measures more efficient than the tapering-off process which is proposed for China as regards its opium commerce, it is almost too much to expect it to sacrifice its commercial interests to such an extent. Nevertheless, the moral sense of the British people may bring it about in spite of the selfish, unprincipled exploiters of the Chinese race, for that is what the policy they have followed entitles them to be called, from the statesmen in the cabinet down to the keepers of the Shanghai and Hongkong opium dens. The resolution adopted advising a scientific investigation of the various opium remedies will do good mainly by exposing the frauds; we have but little faith in the efficacy of the measures suggested other than those which have been tested and found effective by years of medical experience.

THE CARNEGIE FOUNDATION, AND THE MEDICAL PROFESSION

The third annual report of the Carnegie Foundation for the Advancement of Teaching, recently issued, contains much of particular interest to members of the medical profession. Further, it indicates the enormous influence exerted by that body for uniformity of standards in education in this country. It shows that the poor work done in some of our high schools is due chiefly to the indifference of teachers and an unawakened public sentiment, and that the most serious obstacle to the development of the high schools is the ever-present competition for students between colleges, through which standards of admission are lowered. Thus the report shows that the colleges and medical schools, instead of helping, have been actually hindering the development of high schools by competing with them for students from the elementary grades. In the discussion of sectarian medicine the report indicates that if a man licensed to practice medicine is thoroughly grounded in the fundamental sciences on which the practice of medicine depends, such as anatomy, physiology, pathology and the like, then it matters little with what particular school of medicine he may ally himself. The overcrowding of the profession, according to the report, is particularly manifested in small towns of 500 families or less, where a half-dozen or more doctors are striving to make a living when two competent men could easily do the work. Moreover, the matters of right sanitation and the public health of the community would receive better attention if physicians were of a higher grade. Low educational standards, therefore, are both unjust to the public and demoralizing to the profession. They serve to lay in the path of ill-trained men temptations which otherwise would not exist, and the fruits of these low standards are reaped by the public. But of particular interest is the discussion of medicine as a business and medicine as a profession, the difference being that in the former a physician seeks only his own gain, whereas in the latter he assumes also his obligations to the profession itself and to the public. Every man who enters the profession of medicine assumes an obligation to prepare himself properly for it and in his practice to remember his duty to the public as well as to himself. The profession will remain a profession only through the observance of these ideals. This report is well worth a careful reading by every member of our profession.

Medical News

CALIFORNIA

Federal Health Officers to be Honored.—In recognition of the work done by Dr. Rupert Blue and his corps of assistants, the citizens' health committee of San Francisco, together with other influential men of the city and state, have arranged for a banquet to be given in their honor at the Fairmont Hotel, March 31.

Personal.—Dr. Alvin W. Hewlett, assistant professor of medicine in Cooper Medical College, has been appointed to succeed Dr. George Dock as professor of medicine in the University of Michigan, Ann Arbor.——Dr. Hugh Beattie, Elk Grove, has been made health officer of Sacramento county, vice Dr. George T. Hesser, Folsom City.

Guests from the East Honored.—Former students and graduates of the Albany (N. Y.) Medical College tendered a banquet to Dr. Albert Vander Veer at the California Club, Los Angeles, recently. Dr. Vander Veer addressed the county medical society a week later.——A lunch was given at the Hotel Maryland, Pasadena, February 26, for Dr. Wilfrid T. Grenfell, the surgeon-missionary of the Labrador coast.

GEORGIA

Found Guilty.—G. G. Swicard, a colored man claiming to be an "Indian Doctor," who has operated an alleged sanitarium in Atlanta, is said to have been found guilty of operating a sanitarium without a license or diploma and sentenced to thirty days in the city workhouse.

State Tuberculosis Sanatorium.—The president of the board of trustees of the proposed state tuberculosis sanatorium has advertised for bids for the location of the institution. The requirements are a tract of not less than 300 acres, in an elevated location, with no adjacent swamps or ponds, and susceptible of perfect drainage, lying in any part of the state north of an east and west line through the city of Macon.

Personal.—Dr. Stewart R. Roberts has been made examining physician of the public schools of Atlanta.——Dr. William W. Mangum, who has been practicing in the City of Mexico for two years, has returned and located in Rome, Ga.——Dr. A. D. Little has been made a member of the board of health

of Thomasville.——Dr. Edward C. Goodrich, secretary of the Augusta board of health, has been given indefinite leave of absence on account of ill health, and Dr. S. C. Wilson is temporarily supplying his place.——Dr. Joseph H. Bradfield has been elected a member of the board of health of Atlanta, vice Dr. William B. Armstrong, deceased.

INDIANA

Society Raises Dues.—At the meeting of Allen County Medical Society, March 9, the constitution was amended, making the annual dues $5, including the assessment for the indigent fund for the year.

Hospital for Gary.—The contract for the United States Steel Corporation's new hospital at Gary was let March 6. The building will cost about $200,000 and will be located on the south bank of the Calumet river just east of Broadway.

Personal.—Dr. William G. Wegner, South Bend, has been reappointed secretary of the St. Joseph County Board of Health.——Dr. Patrick H. Caney, secretary of the Vincennes Board of Health, has been placed in charge of the city laboratory.

Contribution to Carroll Fund.—At the meeting of the Fountain-Warren Counties Medical Society, held in Covington, March 4, a collection amounting to $12.95 was taken in behalf of the family of the late Major James Carroll, Medical Corps, U. S. Army.

Fail to Regulate Itinerants.—The endeavor of the medical fraternity of Anderson and Madison county to secure an enactment of an ordinance taxing itinerant physicians $50 a day has failed, as the ordinance was voted down by the committee on ordinances.

IOWA

Personal.—Drs. Charles M. Wade and Ernest A. Jenkinson have been elected trustees of the Sioux City College of Medicine.——Dr. David S. Fairchild, Clinton, has been appointed surgeon general of Iowa.

Retreat for Consumptives.—The mayor of Sioux City has appointed a committee of business and professional men with Dr. Robert E. Conniff as chairman to locate a retreat for consumptives for Woodbury county and Sioux City.

Convicted.—Dr. Franklin W. Sells, Osceola, is said to have been convicted of criminal assault by a jury in the district court February 18, and sentenced to imprisonment for twenty years in the state penitentiary. Dr. Sells protests his innocence and has appealed to the supreme court.

Would Add Venereal to List of Contagious Diseases.—A resolution has been sent to the general assembly stating that more deaths in the state are traceable to gonorrhea and syphilis than to smallpox, cholera, yellow fever, diphtheria, scarlet fever, and measles combined; that from 10 to 20 per cent. of the blindness of the state and from 50 to 90 per cent. of the inflammatory diseases of the pelvis in women results from these diseases; that no person not guilty of a crime against the laws of the state would be inconvenienced by granting the request that follows, and petitioning the legislature to declare gonorrhea and syphilis to be contagious diseases and prescribing isolation, quarantine and control during the infectious stages.

MICHIGAN

Personal.—Dr. Thomas L. Ryan has been elected a member of the board of health of Saginaw.——Dr. William A. Stone, Kalamazoo, has been made secretary of the Kalamazoo State Hospital Board.——Dr. Arthur P. Schulz, Orion, has been appointed chief physician at the Ionia Reformatory, vice Dr. Wylie E. Woodbury, who accepted the position of assistant at the State Hospital.——Dr. L. M. Power, South Range, has succeeded Henry S. Cole as local surgeon of the Copper Range Railroad.

The Tuberculosis Fight.—Houghton County Antituberculosis Society, at its annual meeting, March 9, elected Dr. L. L. Hubbard, Houghton, president, and Dr. Albert B. Simonson, Calumet, second vice-president. Dr. Frederick Tice, Chicago, delivered two lectures on "Tuberculosis" under the auspices of the society, one in Calumet and one in Houghton.——At the annual meeting of the Kalamazoo Antituberculosis Society, Dr. Herman Ostrander was elected president; A. Gaylord Slocum, first vice-president; Dr. David J. Levy, second vice-president; and Dr. S. Rudolph Light, treasurer.——Dr. Edwin F. Beckwith, Ionia, has been elected president of the local branch of the Michigan Antituberculosis Association.

NEW JERSEY

Personal.—Dr. William P. Lamb, Newark, has been appointed district physician.——Dr. Edward F. Denner has been elected president, Dr. Frank J. Keller, secretary, and Drs. James O'Donnell and J. William Atkinson, members of the executive committee of the staff of St. Joseph's Hospital, Paterson.——Dr. Francis H. Todd has been appointed a member of the board of health of Paterson.——Dr. Joseph Welch has been elected president of the Long Branch Board of Health, vice Dr. John W. Bennett, resigned.

NEW YORK

Transfer Insane Patients.—As a result of the overcrowding of the State Hospital at King's Park, L. I., 150 patients have been transferred to other institutions, 100 being sent to Binghamton and the remainder to Willard.

Censors Cause Arrests.—The board of censors of the Cortland County Medical Society has caused the arrest of four individuals, charged with prescribing for and treating the sick without licenses. Of these four, Charles J. Andrus calls himself a "chiropractor," Charles A. Jennings a "magnetic healer," while W. B. Johnson and Patrick Ryan have electric bath and treatment establishments. The defendants are said to have been held to await the action of the grand jury.

Rabies on the Increase.—Dr. Veranus A. Moore, of the New York State College of Agriculture, states that recently rabies has shown a decided increase and that dog's heads are coming in daily for examination. Since January 1, 117 heads have been received and 77 of these have shown signs of rabies. During the first fifteen days of March 35 animals were received. During the year 1908, 315 cases in all were tested. The increase has been so rapid of late that quarantine restrictions seem to be imminent.

McGrath Bill Passed.—This measure aims to take from boards of supervisors and town boards the power of determining whether a tuberculosis hospital or camp shall be erected within their jurisdiction and provides that this power be given to the State Commissioner of Health and the local health officer after a hearing. If they are unable to agree in approving or disapproving of the location applied for within thirty days, the applicant can, within ten days, file in the office of the State Commissioner of Health a request that the petition be referred to a board consisting of the lieutenant governor, the speaker of the assembly and the commissioner. This is the first important bill passed as a result of the recommendation of the governor that it be acted on favorably during the session.

Report of Tuberculosis Committee.—The Tuberculosis Committee of the State Charities Aid Association, in its annual report, states that the following cities had been visited with a traveling tuberculosis exhibition in the course of the cooperative campaign carried on by the association and the State Department of Health: Canandaigua, Geneva, Auburn, Cortland, Elmira, Binghamton, Oswego, Cohoes and Poughkeepsie. There are 108 public meetings held in connection with the exhibit, at which addresses were made by 243 individuals, and more than 300,000 pieces of literature were distributed. Exhibits on the nature, cure and prevention of tuberculosis were also sent to 36 county fairs. As a result of the campaign, Oneida, Ontario and Rensselaer counties and the city of Elmira will establish hospitals for the care of advanced cases of tuberculosis, and Albany, Schenectady and Dobbs Ferry will have day camps. Dispensaries have already been opened in Utica, Rome, Troy, Albany and Schenectady, and visiting nurses have been provided in these places. After the close of the exhibition in Yonkers March 22, the exhibition and propaganda work will go on in Newburgh, Middletown and Kingston, where the campaign closes May 22.

New York City

Colony for Defectives.—A site for the Eastern New York Custodial Asylum has been selected at Thiells, Rockland county. The commission in its report to the legislature recommends that the colony be named Letchworth Village in recognition of the services of William Pryor Letchworth in behalf of the defective wards of the state.

In the Interest of Medical Education.—The Association of American Medical Colleges held a special meeting in the New York Academy of Medicine on March 15. Dr. John A. Wyeth, president of the Academy of Medicine, gave an address on "The Medical Student of 1867." Dr. Eli H. Long read a paper

on "The Functions of the Medical School," and Henry S. Pritchard, president of the Carnegie Foundation for the Advancement of Teaching, spoke on "Standards of Medical Education."

Annex to St. Luke's Hospital.—Plans have been filed for the proposed enlargement of St. Luke's Hospital by a nine-story addition to be known as the Travers Pavilion. It will be seventy feet front and of a similar depth, and will harmonize in appearance with the existing group of buildings. Some of the special features will be a series of surgical operating rooms and examining rooms, an electrical room, a laboratory, a solarium and a roof garden. The building will cost $200,000 and will accommodate non-resident patients.

Personal.—Dr. Wolff Freudenthal has been appointed a corresponding member of the Laryngologic Society of Berlin, Germany.——Dr. William T. Godfrey, former house surgeon at the New York Post-Graduate Hospital, has opened an office in Stamford, Conn.——Dr. George M. Bennett, house surgeon at the Harlem Hospital, is reported to be in a serious condition from septicemia, due to an operation wound.——Dr. James P. Tuttle spent March 15 and 16 with friends in Nashville, and was the guest of honor at the Nashville Academy of Medicine, March 16, delivering an address on "Persigmoiditis."

In Memory of Dr. Bull.—Mrs. Bull has presented a bronze bust of the late Dr. William T. Bull, executed by Enid Yandell, to the New York Academy of Medicine.——Mrs. Bull has authorized the statement that she will build a hospital for the treatment of tuberculosis as a memorial to her husband. The amount of the endowment, location, and other details will be announced later.——The medical board of the General Memorial Hospital has adopted resolutions regretting the death of Dr. William Tillinghast Bull, a distinguished member of its staff, and one of the founders of the hospital, expressing its appreciation of the services rendered by Dr. Bull, and placing on record its own sense of great personal grief at the loss of a distinguished colleague and a warm personal friend.——A meeting was recently held at the home of Dr. L. Bolton Bangs, and a committee was appointed to discuss the question of erecting a fitting memorial to the late Dr. William T. Bull. It has been proposed to establish an institution for surgical research in connection with the Medical Department of Columbia University.

NORTH CAROLINA

January Deaths.—During January 278 deaths were reported in the state, equivalent to an annual mortality of 12.9 per 1,000. Chief among death causes were consumption, 56; pneumonia, 33; heart diseases, 32; and brain diseases, 16.

Personal.—Dr. Marshall H. Fletcher, Asheville, has been appointed a member of the city police commission.——Dr. Mont. R. Farrar, Greensboro, has removed to Nashville, Tenn.——Dr. Andrew H. Harriss, Wilmington, has been appointed major and surgeon, N. C. State Guard, vice Dr. Frank H. Holmes, Clinton, resigned.

Injunction Modified.—Judge Ferguson, in the superior court at Asheville, has made an order modifying his temporary injunction in the case of the Forest Hill Company and the Sisters of Mercy of North Carolina, restraining the sisters from continuing the construction of a tuberculosis sanatorium in Asheville. The modification of the original order permits the sisters to establish a sanatorium at "Ridgewood," but restrains them from the care of tubercular patients nearer the street than 190 feet, and nearer adjoining property than 30 feet. This permanently restrains the location of patients in tents close to the street or adjoining property.

OHIO

Fails to Prove Illegal Sale of Cocain.—Contradictory evidence offered in the case caused the discharge in the police court, March 6, of Dr. Frank J. Collison, Columbus, charged with the illegal sale of cocain. One witness for the pharmacy board admitted that he had served a term in prison, and the testimony of a colored witness was contradicted at every point.

Congratulation on Conviction.—Dr. George H. Matson, secretary of the State Board of Medical Examination and Registration, has written to the Cleveland *News* to congratulate it on the successful issue of the case against A. C. Goode and Adolph Slaughter, the men connected with the Dr. Boyd medical offices, who were arrested and prosecuted on the charge of conducting an immoral exhibition, on information furnished by the *News*.

Tuberculosis Sanatorium.—Ground has been broken for the erection of a temporary structure to be utilized by the Dayton Tuberculosis Society as a sanatorium. The building is located about six miles north of the city and will be ready for occupancy April 1. It will have two wards, one for men and one for women, and will accommodate twenty patients. Dr. E. B. Markey has been made physician in charge, and Drs. John S. Beck, Horace Bonner, Francis C. Gray and James M. Weaver make up the consulting staff of the institution.

PENNSYLVANIA

Medical Society Condemns Food Bill.—The Bedford County Medical Society at its recent meeting condemned the Todd pure food bill as reported by the senate committee on public health and sanitation.

Osteopath Bill Signed.—The bill creating a board of five examiners, before which every osteopath shall undergo examination before receiving a license to practice was signed March 19. The governor vetoed a bill of this character two years ago.

Trachoma Hospital Planned.—A bill introduced into the senate, March 17, asks for an appropriation of $22,000 to establish a trachoma hospital at Marcus Hook, the state quarantine station; $10,000 to provide a hospital for temporary treatment, $10,000 for an emergency fund, and $2,000 to support a resident ophthalmologist.

Philadelphia

Diphtheria at the University.—Four cases of diphtheria were reported among the students of the University of Pennsylvania, March 15. Four cases were also reported on the same date among the pupils of the Catto public school.

Visiting Nurses.—The report of the Visiting Nurse Society for 1908 shows that the nurses made 51,181 visits. The society reports that the expense of a nurse is about $900 per year and that she pays from 2,000 to 2,100 visits during that period.

Tuberculosis Camp for Poor.—Councils' finance committee has reported favorably on the ordinance to purchase seventeen acres of ground in the vicinity of Bartrum's Gardens for park purposes at a cost of $125,000. This site was selected by Mayor Reyburn as a tuberculosis camp for the city's poor.

Dr. Bennett Honored.—Dr. William H. Bennett, the founder of St. Christopher's Hospital for Children and instrumental in establishing the Children's Seashore Home at Atlantic City, has been honored by the establishment with an endowment of $6,000, of a free ward in the latter institution, to be known as the William H. Bennett ward.

Dinner to Dr. Mills.—About one hundred representative physicians of the city assembled at the Bellevue-Stratford, March 13, for the testimonial dinner to Dr. Charles Karsner Mills, the occasion marking the fortieth anniversary of his entrance into the medical profession, Dr. George E. de Schweinitz acting as toastmaster. Addresses were made by Drs. S. Weir Mitchell, James J. Putnam, Boston; Abraham Jacobi, New York City; William H. Welch, Baltimore; Charles L. Dana, New York City; Rev. Arthur B. Conger, and Provost C. C. Harrison of the University of Pennsylvania. A silver loving-cup was presented to Dr. Mills by Dr. William W. Keen on behalf of those present.

GENERAL NEWS AND COMMENT

The President's Physicians.—President Taft has selected Lieutenant-Colonel Guy L. Edie and Captain Matthew A. DeLaney, Medical Corps, U. S. Army, as his physicians during his term in the White House.

Archives Discontinued.—The editors of the *Archives of Otology*, Drs. Herman Knapp and Arnold Knapp, New York City, announce that this publication came to a close with the number for December, 1908, which completed the thirty-seventh volume.

Warning Concerning Agent.—Physicians are cautioned to pay no money for THE JOURNAL or the Association to one giving the name of J. W. Holman or P. W. Corzilius. He has recently been working the profession in Ohio around Cincinnati and Dayton. He is of medium height, rather stout, and about 60 years of age. Any information as to his present whereabouts will be appreciated.

Hamlet with Hamlet Left Out.—According to *Signs of the Times*, the Sacramento, Cal., Ad Club recently presented an

advertising tragedy of Hamlet with the part of Hamlet left out. It discussed the to it important question, "Should the Medical Profession Advertise?" from the viewpoints of ad man, druggist, newspaper, and layman. The viewpoint of the physician presumably is too insignificant for consideration; or perhaps it may be that the physicians of Sacramento are solid in supporting the traditional view, and do not consider the question one open for discussion.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 13, 1909.

Death of the Editor of the Lancet

Thomas Wakley, L.R.C.P., editor of the *Lancet*, died at his residence, Hyde Park Gate, from hepatitis. He was 58 years old and was the only son of Mr. Thomas Henry Wakley, the late editor of the same journal, who died nearly two years ago, and a grandson of Thomas Wakley, who founded the *Lancet* in 1823. During its long career the journal has been owned and edited by members of the Wakley family. The late editor was the fourth to occupy the chair, and well maintained the traditions of the *Lancet* as the leading medical journal in the British empire, whether as a record of scientific progress or as a champion of the interests of the profession. Like his father and his uncle who preceded him, he did not write much himself, but he was keen in discovering men who could write and what they could write. He read carefully all his proofs and was punctilious in correcting them and in maintaining the high literary standard which has always distinguished the *Lancet*. He leaves a son, aged 4, and for the first time since its foundation the editorship of the *Lancet* has necessarily passed out of the Wakley family, but it will probably be conducted on the same lines as heretofore.

Smallpox

An outbreak of smallpox has occurred in Bristol under peculiar circumstances. The first case was that of a dock-laborer who had been unloading barley, and it was thought that the disease was brought from eastern Europe. Twenty-three cases followed, with three deaths. In one case the disease was not diagnosed, and the patient was removed to a hospital with the result that the ambulance driver and others were infected. The patient died, the body was taken home, and his friends held a wake, which was attended by 40 or 50 people, several of whom contracted the disease. At Bolton two cotton-mill workers have contracted smallpox. It is suggested that the disease was derived from bales of imported cotton. After enjoying an immunity of the disease for five years, two cases of smallpox have occurred in London.

Importation of Diseased Meat

Dr. H. Williams, health officer of the port of London, has made a serious report on a consignment of offal which arrived from the United States. It consisted of 654 cases of ox tongues, ox kidneys, ox livers, ox tails, tripe, lamb sweetbreads, lamb livers, lamb plucks and calves' tongues. There were 250 boxes of plucks, of which 13 were thawed for examination. Each box contained 12 sheep plucks, and out of the 156 no fewer than 16 of the livers and one of the lungs were found diseased. It was therefore decided to examine a further 45 boxes, with the result that 45 livers and 3 lungs were found diseased. The remainder were then examined, and in 2,400 plucks there were found 528 diseased sheep livers and 130 diseased lungs. All the boxes bore a label stating that they had been examined in the United States. On the same ship were 300 frozen pig carcasses; 15 of them were thawed and found to be minus the lymphatic glands, in addition to one which showed tuberculosis. The removal of the lymphatic glands was considered evidence that when examined in the United States they had shown signs of disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 9, 1909.

Election of M. Paul Strauss to the Academy of Medicine

At its last session the *Académie de Médecine* had to elect an *associé libre* in place of M. Chamberland, deceased. On the first ballot, M. Paul Strauss was elected by 66 votes against 12 for Dr. Voisin, physician to the Salpêtrière, 3 for Dr. Capitan, professor at the School of Anthropology, and 1 for Dr. Caster, a well-known laryngologist. M. Strauss, who is senator for the Seine department, has won a prominent position in parliament by his studies of questions of public hygiene, hospitalization, assistance, etc. He presides over the superior council of the *Assistance Publique* and the superior council for infant wards of the state. He has published some works that are highly esteemed, among them "*Dépopulation et Puériculture*," "*La Croisade sanitaire*," and "*Habitations à bon marché*." He is editor of the *Revue philanthropique*, a magazine devoted to questions of medical assistance, the struggle against alcoholism and tuberculosis, unhealthy dwellings, etc.

The Examination Determining Eligibility to Assistant Professorships

March 3 a deputation of candidates for the *concours d'admissibilité à l'agrégation* accompanied by representatives of the *Société de l'internat des hôpitaux*, the *Association corporative des étudiants en médecine*, the *Syndicat des médecins du departement de la Seine*, etc., waited on the minister of education and presented a document summarizing the objections of the rank and file of the profession to the new regulation restricting the competition for professorships to those who have passed this preliminary "admissibility" examination. [The history of this new *concours* has been related in preceding Paris letters and also in Osler's "Impressions of Paris" in THE JOURNAL, Feb. 27, page 703.] Chief among the numerous objections to it is its tendency to emphasize and reward didactic theory rather than the practical side of medicine. The minister received the deputation cordially and promised to weigh carefully the arguments presented, but he has declared himself resolutely opposed to the introduction of the German system of privat-docents and to the autonomy of the medical schools.

The Prophylaxis of Contagious Diseases in the Army

The undersecretary of the war department ordered some months ago that all cases of contagious disease that should appear at any point whatever should be reported to him daily by telegraph. In order to ensure—independently of the measures taken under such circumstances in virtue of other regulations—rapid and systematic prophylactic action, he has recently organized at the war department a permanent technical section for the prophylaxis of infectious diseases in the army. This section, which will be presided over by Vaillard, and of which the professor of epidemiology and microbiology at the *école d'application du service de santé* shall be *ex officio* a member, will consist of ten military medical officers. It will have as its duty, from the commencement of a disease capable of epidemic development, to send one of its members to the threatened point, that he may make on the spot the necessary technical investigations and apply every measure to prevent the spread of the disease, if these measures have not been already applied. The technical section thus created will be provided with all the material appropriate for its duties, and particularly for the necessary bacteriologic examinations and researches. It will be a sort of flying column charged with the duty of detecting and giving battle to the contagious diseases wherever they may appear.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 3, 1909.

National Association for Reduction of Infant Mortality

A week ago a German association for the care of infants was formed, to centralize the various state societies which have already been formed in most German states and which are otherwise independent. The first general meeting of the new organization will occur at Dresden in June of this year.

Personal

Ludolph Brauer, professor of internal medicine at the University of Marburg, has been called to Greifswald in place of Minkowski. It is not certain that the call will be accepted.

A few weeks ago Professor Pflüger celebrated the rare event of a 50 years' jubilee as a regular professor. He has spent the whole time in Bonn. On this occasion he received the great gold medal for science.

Official Medical Oversight of Industries in Bavaria

While in England, Switzerland, Belgium and the Netherlands, physicians have for a long time assisted in carrying out the provisions of the laws for protecting laborers, no provision for medical inspection of trades or medical improvement of factory hygiene was made in Germany until a few

years ago, when in Baden and Würtemberg a physician was appointed (*im Nebenamt*) advisor of the government department of labor and medical inspector of industries. This year a physician was for the first time appointed in Bavaria (*im Hauptamt*) as official expert advisor of the central inspection service for trades and factories, with the title of *Landes-Gewerbearzt*. He has the oversight of the hygienic protection of laborers within the limits of the trade laws and is also charged with ascertaining and removing conditions harmful to the workman or his environment. In addition, it is his business to investigate all injurious industrial conditions on notice of the trade inspection authorities, mine inspectors, official or private physicians, or the *Krankenkassen*. He is expected to supervise the hygienic relations of home workers and the smaller shops, as well as those of the larger industries. Finally he has charge of the royal museum of labor so far as the exhibits are of medical and hygienic interest as well as in regard to traveling exhibitions, lectures, etc. The instruction of workmen as to the special dangers incident to their trade and the means of preventing them and education in special and general hygiene will also form an important function of this official.

Spa Treatment for Relatives of German Soldiers

The soldiers of the German army, if hospital treatment is unsuccessful, are given, on the order of the regiment physician, a course of treatment at some spa, generally in Germany, but exceptionally even at Carlsbad, Marienbad, or Teplitz. Tuberculous soldiers are generally sent only to closed sanatoria, but in exceptional cases they also are treated at the public health resorts. Among the institutions available are the tuberculosis wards of the hospitals and a number of sanatoria for pulmonary disease. The members of the families of soldiers in active service also receive such treatment, and even tuberculous patients belonging to the families of the under officers who live in the garrison are sent to the tuberculosis sanatoria, if their residence in the garrison would endanger their environment. At Frankfurt a. M. there is a special society which provides a sanatorium at Idstein for the relatives of soldiers.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, March 6, 1909.

The Affair of Professor Strümpell

After the death of Professor von Schrötter, medical circles, through the senate of the medical faculty, recommended the appointment of Professor Strümpell, of Breslau, to succeed the former. The negotiations with Strümpell were conducted seriously; the latter has severed his connection with the university at Breslau, and Professor Chvostek, the temporary director of the deceased Schrötter's clinic, was recently notified that Strümpell would take over the clinic at the beginning of the summer term, one week after the Easter holidays. Yet up to the present the official appointment has not been announced in the *Wiener Zeitung*, the paper which publishes all government appointments. It is rumored that powerful influences are at work to hinder the appointment at the last moment. Such things have happened repeatedly before, and the senate of the university has decided to make this the last time by resigning in a body if the government rescinds its decision to appoint Strümpell. The affair sheds no favorable light on the university of Vienna, and the difficulty of inducing a good man to accept an appointment here will be markedly increased unless a radical change is effected.

Snow and the Purity of Air

The recent enormous snowfalls in this city have enabled the city analytical chemist to make a series of investigations on the purity of the air. The entire quantity of snow deposited during twelve hours was collected from the roofs of a number of houses in various quarters on week-days and on Sundays, and then analyzed. The amount of mineral matter was rather astonishing: besides coal particles, about 0.5 gm. of soot and common salt per ten kilos of snow, or about twenty tons of mineral and organic matter in the air covering Vienna. Free ammonia, organic ammonia and sulphuric acid were found in traces only in the Sunday snow, but the week-day snow held more, especially of sulphuric acid. Bacteriologic results were negative, the experiments offering no reliable data. It has been found that the amount of snow which descended over Vienna will be sufficient to prevent a water famine in 1909.

Pharmacology

Pharmacopeial Board Meets

The board of trustees of the United States Pharmacopeial Convention held a special meeting at the Hotel Stafford, Baltimore, March 12 and 13, 1909. A special committee, consisting of Dr. James H. Beal, Dr. H. M. Whelpley and Prof. Joseph P. Remington, was appointed to prepare a report of the work of the board of trustees since 1900 and make recommendations to be submitted with this report at the 1910 convention. Arrangements are being made for the convention, which will be held at Washington, May 10, 1910. Medical and pharmaceutical teaching institutions and state organizations are requested to send credentials for delegates to the secretary of the board of trustees, Dr. Murray Galt Motter, Hygienic Laboratory, Twenty-fifth and E streets, N. W., Washington, D. C. The board adjourned after voting to hold the annual meeting at Chicago, May 21.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

UNGUENTINE

W. A. Puckner and A. H. Clark

Attention has been called at various times to the fact that the value of a published "formula" to a proprietary remedy is in direct ratio to the reliability of the manufacturer publishing it. When medical journals first insisted on their advertisers letting physicians know the contents of the remedies they wished to sell them, medical literature reeked with formulas—some of them of weird and wonderful design. Since the advent of the Food and Drugs Act, which requires that labels shall approximate truthfulness, and particularly since the Council on Pharmacy and Chemistry has investigated a number of proprietary remedies, the publication of "formulas" is not so common.

Unguentine, manufactured by the Norwich Pharmacal Co., is one of those remedies whose advertisement for years always included "a formula"; more recently, however, this is not in evidence. In an advertisement which appeared about ten years ago, the "formula" given is:

"Carbolic acid ..... 2 per cent.
"Ichthyol ..... 5 per cent.
"Alum ..... 15 to 16 per cent."

It was claimed that by a special process of their own, the manufacturers had eliminated most of the astringent properties of the alum rendering it non-irritant. It was also stated that "the base of Unguentine is pure petrolatum." Later the manufacturers seem to have changed the composition of their product, or at least the "formula" given in the advertisements was changed. Thus it appeared:

"Alum ..... 15 per cent.
"Zinc oxid ..... 5 per cent.
"Carbolic acid ..... 2 per cent.
"Ichthyol ..... 5 per cent.
"Aromatics and antiseptic oils with specially prepared petrolatum and animal fat base."

The introduction of zinc oxid, aromatic and antiseptic oils and animal fat was a new feature. Somewhat later, and particularly since the passage of the national Food and Drugs Act, no formula or other statement in regard to the composition seems to have appeared in the advertisements in the medical press. In the 1906 price-list (p. 170) the following formula appears:

"Unguentine represents:
"Alum (non-irritating) ..... 15 per cent.
"Phenol ..... 2 per cent.
"Ichthyol ..... 5 per cent.
"Zinc oxid ..... 5 per cent.
"Aromatic and antiseptic oils, with especially prepared petrolatum and purified animal fat."

In the price-list issued for 1908—after the Food and Drugs Act went into effect—the following appears:

"Unguentine represents:
"Alum compound (non-irritating)
"Phenol,
"Ichthyol,
"Zinc oxid,
"Aromatic and antiseptic oils, with especially prepared petrolatum and purified animal fat."

Thus the proportions are omitted, and alum becomes "alum compound," whatever that may mean.

In view of the conflicting statements made by the Norwich Pharmacal Company, in regard to their leading specialty, Unguentine, and especially because much stress was laid on the filing of their "guarantee" under the Food and Drugs Act, it was decided to ascertain of what Unguentine really consists.

From our analysis published in detail below,[1] we conclude that Unguentine contains not alum but aluminum acetate (small amounts of alum may be present as impurities in the aluminum acetate), zinc oxid, or more probably impure zinc carbonate, and that the entire quantity of both does not exceed 5 per cent. It contains no ichthyol, or if any but the merest traces, and less than 1 per cent. of phenol. The aromatic oils amount to not more than approximately 1 per cent. in all. The ointment-base is, in the main, petrolatum.

In Unguentine we have, therefore, another proprietary "specialty," regarding the composition of which indefinite, false or misleading statements have been made—this irrespective of protestation of honesty by the firm.

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1. ANALYSIS OF UNGUENTINE: Aluminum, zinc and sulphate ions were found in the residue after ignition, by the usual tests. Also on boiling Unguentine with dilute hydrochloric acid, aluminum, zinc and sulphate ions are found in the acid solution by the usual tests.

Phenol: Unguentine has the odor of phenol and a portion distilled in a current of steam gives a distillate which absorbs bromin and gives the ferric chlorid reaction for phenols.

Ichthyol: The presence of ichthyol in unguentine could not be shown by any test. As little as 1 per cent. ichthyol imparts to petrolatum the characteristic odor of ichthyol and a dark color. On boiling such a mixture with water, ichthyol will pass into the water and color it brown. Unguentine has no odor of ichthyol and on boiling with water no color is imparted to the water.

Carbonate: On extracting Unguentine with carbon disulphid a brownish white residue remains which effervesces with dilute hydrochloric acid. The gas has no odor. A part of this residue is granular and has a reddish brown color and the appearance of impure zinc carbonate.

Acetate: The residue insoluble in carbon disulphid when rendered acid with phosphoric acid and subjected to steam distillation yields a distillate which has an acid reaction. This distillate on neutralization with sodium hydroxid and evaporating to dryness leaves a residue a portion of which treated with concentrated sulphuric acid and alcohol gives a distinct odor of ethyl acetate. Another portion dissolved in water on adding ferric chlorid turns red and on boiling this mixture a reddish brown precipitate forms.

The portion soluble in carbon disulphid (the ointment base) when boiled with repeated separate portions of alcohol dissolves to some extent in the hot alcohol and on evaporation of the alcohol a residue remains which closely resembles the product claimed when beeswax is treated in the same way. The carbon-disulphid-soluble matter has a low iodin number and a low saponification value, indicating that it contains very little fat.

Substance insoluble in carbon disulphid. Twenty grams of unguentine was thoroughly extracted with carbon disulphid and the residue dried to constant weight at 100 C. In one experiment the residue weighed 0.9944 gm., or 4.97 per cent. A duplicate gave 0.9898 gm. residue, or 4.95 per cent.

Matter volatile at 100 C. Five grams dried to constant weight at 100 C. lost 0.109 gm. in weight, or 2.18 per cent.

Determination of aluminum, zinc and sulphate. Ten grams of unguentine was boiled repeatedly with diluted hydrochloric acid. "In the solution obtained the aluminum (Al), estimated as aluminum oxid in the usual way, was found to be 0.216 per cent. and 0.205 per cent., average 0.211 per cent. of the unguentine taken. The filtrate from the aluminum estimation was made up to 500 c.c. In portion of 100 c.c. the zinc was determined as $Zn\ NH_4PO_4$ (*Ztschr. f. anal. Chem.*, 1900, xxxix, p. 273) and found to be 2.19 per cent. and 2.24 per cent., average 2.27 per cent. zinc (Zn). In another 100 c.c. the sulphate was determined as barium sulphate and 0.658 per cent. and 0.656 per cent., average 0.657 per cent. sulphate (SO_4) was found.

If unguentine contains alum, the amount of alum, as indicated by the aluminum found, should agree with the amount indicated by the sulphate found. The amount of aluminum found would indicate nearly 4 per cent. alum, while the sulphate is equivalent to only about 1.5 per cent. Since an acetate is present, we conclude that the substance spoken of as "alum," "alum compound" or alum "deprived of its astringent properties" is not alum, but, instead, aluminum acetate or probably a basic aluminum acetate, together with some alum. The per cent. of zinc found corresponds to 2.6 per cent. zinc oxid; since a carbonate is present, we conclude that some of the zinc is present as carbonate.

The combined amounts of zinc oxid or carbonate and aluminum acetate can not exceed 5 per cent. of the ointment, since approximately 95 per cent. of unguentine is soluble in carbon disulphid. Also the total amount of phenol and aromatic and antiseptic oils can not exceed 2.18 per cent., since that is all that is volatile at 100 C.

Phenol: The estimation of phenol, according to the method which we devised (THE JOURNAL, July 25, 1908, p. 330), indicated that unguentine contained 0.81 per cent. and 0.77 per cent., average 0.78 per cent. phenol.

Correspondence

The Evolution of Refraction and Its Necessity

To the Editor:—Notwithstanding the chaos that has apparently existed in medical literature and among ophthalmologists in reference to cause and effect of eyestrain, there has been evolved a well-defined consensus of opinion on the subject that to-day is recognized by the vast majority of the medical profession.

It is as great an error to be blindly conservative as to be wildly radical in reaching conclusions deduced from new problems that have been presented to the ophthalmologist during the past twenty-five years. During the formative period, the period of investigation, there is no doubt that too many ocular muscles were cut; too much stress laid on the disastrous effects of eyestrain, but from this experience have been established well-settled principles of optics and treatment. We still make our tenotomies, we refract more accurately than ever before, but in doing either we are guided by clinical experience that has made us conservative in both.

In this connection, it was with much surprise that I read some of the statements contained in the paper by the late Dr. St. John Roosa, which appeared in THE JOURNAL, February 13, p. 543. My own personal and clinical experience are so greatly at variance with the conclusions of Dr. Roosa that it is but just that they be recorded.

The last word on refraction was not said by Donders, in fact, has not yet been said. Among certain facts, self-evident to 90 per cent. of the ophthalmologic world to-day, are these: First, that accurate refraction was the exception rather than the rule until a very recent period. Second, no pardon need be asked of the profession or the laity if we demand that only the most accurate scientific work be done in correcting errors of refraction. This is the criterion in the surgical world, why, then, be satisfied with less than this in ophthalmology? No writer has ever demanded more than correct refraction; objection has been made to the slovenly methods often used by men who would disdain to do such work in other branches of medicine. Third, it is a well-established fact that eyestrain does cause "morbid conditions of body and mind." The 10,000 cases reported by an army of ophthalmologists have led to these conclusions, the statements of no one man will be accepted by the profession as an explanation to dissipate this array of evidence. Many ophthalmologists, myself included, can give personal experience to negative such assertions as: "An eye of a moderate degree of hypermetropia without corneal astigmatism, other conditions being favorable, will do its work in a thoroughly satisfactory manner." I never had "conjunctivitis, blepharitis ciliaris, mild forms of lachrymal catarrh, diplopia, vertigo and nausea," but I did have persistent migraine for fifteen years, which was entirely relieved by spheres. My hypermetropia was under + 2.00. I began using + .75 R. and L. for distance, gradually increasing to + 1.50. For ten years since using the above I have never had an attack of migraine. I am sure that the ophthalmologic world agrees with Parsons of London ("Diseases of the Eye," 1907) "Typical migraine may occur" as a result of hypermetropia. I have the record of 1,000 cases to controvert such a statement as "the fact is if glasses do not improve the vision . . . they are absolutely of no use."

One case more: In 1901, a well-known physician of Oklahoma asked me to refract his son who had been a confirmed epileptic for years. The father stated that the son had averaged twenty-five paroxysms a month for the prior six months. The week he came he had three in one day. They had tried all known remedies for epilepsy without avail. He was a muscular robust boy of 16 years. I gave him:

R. + .50 sph. + 2.00 cyl. axis 90 = 20/20
L. + 3.50 cyl. axis 90 = 20/25

Later the father wrote me that in the six months following the use of glasses the son had had five paroxysms, going eight weeks at one time without any. The family removed from the state, and I only heard from them once afterward, on

Aug. 2, 1905, the father called and stated that the son had had no paroxysms since the previous April. This is history. I have no explanation. I have no idea that spectacles are a cure-all for epilepsy.

"There is no special difficulty in the attainment of this knowledge-refraction." How pleasing this must be to the spectacle vendor and the "three-months course" man, a graduate of a diploma mill optical school—it is so easy. As for myself and many other ophthalmologists I can say that after twenty-five years of work, both in America and Europe, no more perplexing problems confront us to-day than those of optical anomalies of the eye.

The position of retinoscopy to-day in the ophthalmologic world, in determining the refraction of the eye, is well stated by Parsons: "Retinoscopy is the most accurate method of refraction." And Jackson: "No other method (retinoscopy) is worthy of being used alone or having sole dependence placed on it."

The statement, "It is often interesting to see how well some of these do their work without being accurately fitted and nothing detrimental to the general health results," is but an illustration of the abuse the human body has endured, and will endure, but we do not often find the medical profession advising neglect and abuse because of this fact. If work is worth doing, it is worth doing well. To condone inexact, unscientific optical work is inexcusable. To be sure, the old world moved on "tolerable" without chloroform, morphin, quinin or antitoxin. The old doctors tell us how they "cut off legs" and had great success before the day of asepsis. The old Egyptians produced wonders without electricity, steam, the telephone or the mariner's compass. Moses and Socrates, Homer and Horace, Praxiteles and Demosthenes lived in those good old days without the telescope, microscope or printing press; notwithstanding all this, the world will, I imagine, cling for some time to these later-day baubles.

It is well known that many hyperopic children soon after birth develop squint, and that an early correction of the strabismus re-establishes ocular equilibrium. Here we find a moderate amount of refractive error producing in a marked degree muscular disturbance. In other cases it may not be squint, but a decided neurotic disturbance which results.

The thousands of individuals with no special ocular symptoms, no "watering of the conjunctiva of the lachrymal sac, inflammation of the edges of the lids, hordeola," who in 1908 went to the ophthalmologists seeking and obtaining relief from headaches, could hardly be convinced that an "almost infallible evidence against the existence of eyestrain in a given case is absence of ocular symptoms."

The dangers of papers of the nature of Dr. Roosa's lies, first, in that they are addressed to the general practitioner and might cause him to think that the last word had been said on this subject, and hence influence him to ignore ocular errors in which there was not marked loss of sight; second, the traveling glass peddler will take advantage of these extreme views to divert refraction into incompetent hands.

In the sharp criticism of the ophthalmologists who differ from us we must remember that we have no oracle of Delphi who by the wave of the pen can read out of the profession whom he will. L. HAYNES BUXTON, Oklahoma City.

The Collargol Report and the Practitioner's Need for the Council on Pharmacy

To the Editor:—The result of the collargol report[1] has been to intensify the feeling of distrust that has been growing during the last few years, of all pharmaceutical products that have not been absolutely proved of value. That sense of awe and unconscious tendency to "uncover" in the presence of an imposing row of new and expensive pharmaceutical products is disappearing. Am I missing important scientific facts, or has the physician become familiar with these products through gazing on artistically labeled packages recently received through the mail or from the hand of an agent, and by reading "incontrovertible facts" in a very dignified piece of advertising literature, closely resembling a reprint from a medical journal? Am I wrong to shun these bright labeled products, which the manufacturer tells me have certain definite actions, and "proves" it by extracts from papers by well-known men? These abstracts we seldom read, or merely glance at, and usually fail to perceive that they prove nothing and that the author never intended they should. We only see the well-known name and think, "He evidently uses and has had success with this product."

Am I right in using pharmacopeial drugs, the actions of which are fairly definite and among which we can find something to get any physiologic action which is capable of being produced by drugs? But we know that such products as phenacetin, hexamethylenamin, etc., are valuable additions to our drug equipment, and yet they once were in the awe-inspiring row. How are we to distinguish the good from the bad, as the "literature" of the producers is in a large measure unreliable? The ordinary practitioner has not the facilities nor time to study out the useful new preparations, and why should he be any more ready to take the producer's word for a drug action than he would be to use every new serum or other biologic product before there is proof that its action is harmless, definite and useful? It is not scientific to accept everything that is brought to our attention by the producer. Why can not we have a tribunal to which these new products may be referred and let it throw out the useless and pass on the useful with a statement of definite action? It seems to me that the American Medical Association is the body to handle this problem and that an enlargement of the activities of the Council on Pharmacy and Chemistry would, to a large extent, settle this matter. We want reliable information on every new product that comes out that has any virtue and we do not want to do the experimenting ourselves.

H. S. WILLSON, Crystal, N. D.

1. THE JOURNAL A. M. A., Mar. 13, 1909, pages 862, 893 and 903.

Nature and Causes of Eczema

To the Editor:—In reading the article of Dr. M. B. Hartzell, on "The Nature and Causes of Eczema" in THE JOURNAL, Nov. 28, 1908, one can not fail to observe with surprise that only one physician, Dr. Henry C. Baum, Syracuse, in discussing the causes referred to hyperacidity as an internal cause. I have seen many cases of eczema, not due to occupation, local irritation or poisoning through dyestuffs, and in which it seemed reasonable to look for other causes—internal causes, such as the ingestion of acid fruits, *e. g.*, plums, lemons or tomatoes. I have seen several patients who developed acute and extensive eruptions, after eating these acid fruits, and in whom the prompt use of sodium bicarbonate, or salicylate in full doses, internally, rapidly relieved the symptoms. Many cases of eczema may be classed with rheumatism, neuralgia and urticaria, as diseases due to uric acidemia, or hyperacidity of the blood. W. A. WATERS, M.D., Columbus, Miss.

Function of Adrenal Cortex

To the Editor:—In an editorial (March 13, 1909, p. 892) you refer to Dr. Guthrie's cases of infantile gigantism, in all of which, using this observer's own words, "adrenal tumors existed." As Dr. Guthrie fails to explain this phenomenon, I beg to state that six years ago I pointed out ("Internal Secretions," Vol. 1, 1903, ed. 1, p. 192 et seq.) that the overgrowth of acromegaly and gigantism was produced through the intermediary of the adrenals. I urged at the time that the adrenal secretion, after reducing the amount of oxygen in the pulmonary air became the constituent of hemoglobin which deals out this gas to the tissues and thus sustains (in so far as the rôle of oxygen is concerned) oxidation, metabolism and nutrition. That lesions of the adrenals *per se* capable of greatly exciting their functional activity should, under these conditions, likewise cause excessive nutrition and overgrowth, as in Dr. Guthrie's cases, is self-evident. I may add that these interesting cases contribute additional evidence to the many data, experimental and clinical (see *New York Medical Journal*, Feb. 20, 1909, p. 362), which have emphasized the correctness of my interpretation of the functions of the adrenals. C. E. DE M. SAJOUS, Philadelphia.

Unauthorized Use of Names

To the Editor:—Is there any possible way of stopping the publication of one's name by the Imperial Information Bureau of St. Paul, Minn., in the so-called *Expert?* Mine is published in the volume just issued (vol. xi, No. 1), absolutely without any authority; and the names of many excellent men throughout the country, who I am sure would not lend their names to such publication. Even the name of a physician dead three years is contained in the list. The lay mind can hardly realize how painful and unjust such a publication is to us.

ANDREW P. BIDDLE, Detroit.

Book Notices

NEW AND NONOFFICIAL REMEDIES, 1909. Containing Descriptions of the Articles Which Have Been Accepted by the Council on Pharmacy and Chemistry of the American Medical Association, Prior to Jan. 1, 1909. Cloth. Pp. 168. Price, 50 cents. Chicago: American Medical Association, 103 Dearborn Ave.

This book and the quarterly supplements thereto which are to be published will be great time-savers to those physicians who have determined to use only such proprietary products as have been approved by the Council on Pharmacy and Chemistry of the American Medical Association. This compilation is really the first regular edition and presents the work of the Council in a new dress and with some desirable advances. The classification adopted permits an easy comparison of remedies of similar origin and properties. The most significant changes are the relegation of mixtures to the appendix and the introduction of a number of non-proprietary remedies which for various reasons have not been admitted to the Pharmacopeia. Therapeutic indications are omitted on the assumption that the physician will be able to apply his knowledge of the properties of the ingredients without aid, either from the Council or from the manufacturers. The non-proprietary remedies admitted to the body of the work are described as accurately and carefully as a painstaking search of the literature will permit.

The descriptions of processes of preparation, physical and chemical properties and physiologic action, contain a wealth of information concerning nonofficial remedies that can not fail to be of immense value to pharmacists and physicians. It is to be regretted that it has been impossible for the Council to publish equally authoritative facts and opinions regarding the therapeutic properties of the synthetics placed before the medical profession. Here, however, the book must be interpreted as a representation in the main of the claims of the manufacturers. This fact is shown by the prevailing use of the phrases "it is claimed" and "it is said to be useful"' applied in some cases to statements of the truth of which there can be little doubt, but for which the Council evidently did not wish to take the responsibility. While this cautious course is much the safest, it is to be regretted that, so far, little has been done to test these remedies in the practice of disinterested clinicians who could speak with authority as to their therapeutic value.

The book contains a description of over 200 distinct remedies. Some of these already have an assured position; others are likely to fall into disuse, but the true attitude toward them should be a readiness to try them critically rather than reject them in a spirit of nihilism. The work is convenient in size and yet presents all the essentials.

CLINICAL LECTURES AND ADDRESSES ON SURGERY. By C. B. Lockwood, Surgeon to St. Bartholomew's Hospital. Flexible Cloth. Pp. 307. Price, $1.50. New York: Oxford University Press, 1907.

This is the second edition of Lockwood's lectures and addresses, most of which have previously appeared in medical journals. The material, which includes such subjects as the essentials of diagnosis on intra-abdominal inflammations, the immediate microscopic diagnosis of tumors during the course of operations, the relation of clinical pathology to diagnosis and treatment, etc., is drawn almost entirely from Lockwood's personal experience. His easy colloquial, personal style is a pleasant variation from the more didactic tone of many surgical text-books, even the occasional ramblings and diversions being interesting and profitable. In these later days of medical teaching, when the old plan of instruction by the preceptor has entirely gone out of vogue, we often miss the personal element in teaching due to the tendency to confine clinical work largely to laboratory methods. Such books as Lockwood's are not only full of instruction, but also possess an interest not always found in more formal writings.

CATARACT EXTRACTION. By H. Herbert, F.R.C.S., Professor of Ophthalmic Medicine and Surgery, Grant Medical College. Cloth. Pp. 391, with illustrations. Price, $3.75. New York: William Wood & Co., 1908.

This complete work on cataract is timely now that we are hearing so much of the various methods of operating on cataract in India. Five thousand cataract extractions form the basis of the work. The illustrations are in black and white and give many interesting details of the various stages of operation. Detail is the keynote of the book, many points being brought forth which are too frequently left to the imagination in similar reports. The intracapsular operation revived by Major Smith of Jullundur is thoroughly discussed and the results compared with the intracapsular operations of other Indian surgeons, and also with the results of the more usual forms of extraction.

TREATMENT OF GONORRHEA IN THE FEMALE. By Charles Leedham-Green, M.B., F.R.C.P., Surgeon to the Queen's Hospital, Birmingham. Second Edition. Cloth. Price, $2.00. Pp. 160. New York: William Wood & Co., 1908.

This handbook has been revised and a number of corrections and additions made. Of the latter are a description of Goldschmidt's new urethroscope, and a consideration of Bier's hyperemic treatment in gonorrheal arthritis. A number of new illustrations have been added to the text.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

HOMES COMMISSION REPORT

To the Editor:—In THE JOURNAL of March 13, page 895, reference is made to the "Report of the President's Homes Commission." How can I obtain this book?

C. F. HORNER, M.D., Tiskilwa, Ill.

ANSWER.—This report, which contains a vast amount of information of interest and value to physicians and to the public, is known as Senate Document No. 644. Write to your senator for a copy; if he fails to send one, write to the Superintendent, Senate Document Room, U. S. Senate, Washington, D. C.

DISINFECTION AFTER TUBERCULOSIS

To the Editor:—Please give information regarding the method of disinfection after death from tuberculosis. How should carpets and furniture be treated? J. P. BRANDON, M.D., Essex, Mo.

ANSWER.—The best method of disinfection of the rooms is by formaldehyd gas and a very practical method of applying this agent is given in THE JOURNAL, July 14, 1906, p. 139. Other articles on the same subject appeared July 28, 1906, p. 288; August 18, p. 523; September 22, p. 952, and Jan. 12, 1907, p. 159. Carpets should be left in the room, and after the gaseous disinfection is over they should be subjected to thorough mechanical cleansing, and finally exposure to fresh air and sunshine if possible. The same treatment should be accorded to upholstered furniture. If parts of the carpet or furniture have been soiled by sputum or other discharges they should be wet with a strong solution of formaldehyd

UNTRAPPED SEWER-INLETS

To the Editor:—In a recent discussion pertaining to untrapped gullies a prominent manufacturer of sewer-pipe maintained that the sewer-gas escaping from these gullies or untrapped sewer-inlets placed at the edge of the sidewalk was practically innocuous to public health. While I am aware that sewer-gas is not as morbific as it was at one time held to be, and that flushing and ventilation palliate both the nuisance and the danger, I held that these inlets on the street and alley corners should be trapped. The odors issuing from them are often very offensive, and it seems self-evident

that hundreds of these untrapped sewer-inlets would not be without danger to the community. Kindly give me the benefit of your opinion. G. C. W.

ANSWER.—There seems to be no evidence that under ordinary conditions the air of sewers contains any appreciable number of pathogenic bacteria. The tendency of a current of air passing over moist surfaces to rid itself of all floating particles is undoubtedly in part responsible for the relative freedom of sewer-air from bacteria of all kinds . Professor Winslow of the Massachusetts Institute of Technology has recently completed an exhaustive series of investigations for the National Association of Master Plumbers on the danger of the spread of bacterial diseases through sewer-air, and his careful quantitative experiments have shown that this danger is so slight as to be practically negligible. On the other hand, if offensive gases escape from sewer-inlets in sufficient quantities to prove an active nuisance, such a condition would seem to call for remedy, even if on other grounds than those relating to public health. There should be little trouble on this score, however, if the gradient of the sewerage system is properly laid down.

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 20, 1909:

Shimer, I. A., major, died at Camp Overton, Mindanao, P. I., March 13, 1909.

Roberts, W. M., capt., ordered, in addition to other duties, to perform duty as surgeon at Sandy Hook Proving Ground, N. J.

Morse, A. W., Baker, F. C., and Reynolds, C. R., capts., ordered to Washington, D. C., for examination for promotion.

Rockhill, E. P., Kiersted, H. S., and Yost, J. D., capts., ordered to San Francisco for examination for promotion.

Roberts, W. M., capt., granted leave of absence for one month.

Siler, J. F., capt., detailed to represent Medical Department of the Army at the meeting of the American Society of Tropical Medicine, Washington, D. C., April 10, 1909.

Ashburn, P. M., major, relieved from duty at Fort Banks, Mass., and ordered to San Francisco for duty at the Army General Hospital.

Geddings, E. F., capt., ordered to Fort Howard, Md., for duty on return from Cuba.

Gunckel, G. I., dent.-surg., ordered to Fort Caswell, N. C., for temporary duty.

Hussey, S. W., dent.-surg., ordered to visit successively for temporary duty Forts Wayne and Brady, Mich.

Ware, W. H., dent.-surg., relieved from duty in the Philippines division and ordered to the United States; granted leave of absence for three months.

Navy Changes

Changes in the Medical Corps, U. S. Navy, for the week ending March 20, 1909:

Edgar, J. M., medical inspector, detached from the Navy Yard, Boston, and ordered to the *Connecticut* as fleet surgeon of the Atlantic fleet.

Curtis, L. W., surgeon, detached from duty as fleet surgeon of the Atlantic fleet and ordered to the Naval Torpedo Station, Newport, R. I.

Spear, R., surgeon, detached from the *Rhode Island* and ordered to the Naval Medical School Hospital, Washington, D. C.

Peck, A. E., P. A. surgeon, detached from the Naval Torpedo Station, Newport, R. I., and ordered to the Naval Medical School, Washington, D. C., for instruction.

Gardner, J. E., medical inspector, detached from the Naval Recruiting Station, Boston, and ordered to continue duty at the Marine Recruiting Station at that city.

Thompson, E., surgeon, detached from the Naval Station, Guantanamo, Cuba, and ordered to the Naval Station, Charleston, S. C.

Snyder, J. J., surgeon, detached from duty in connection with the marine detachment at Port Royal, S. C., and ordered to the *Rhode Island*.

Riggs, C. E., surgeon, detached from duty with the Legation Guard at Pekin, China, and ordered home to wait orders.

Grow, E. J., surgeon, ordered to additional duty at the Naval Dispensary, Naval Medical School Hospital, Washington, D. C.

De Lancy, C. H., P. A. surgeon, retired, ordered home when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Porter, F. E., P. A. surgeon, detached from the Naval Recruiting Station, Detroit, and ordered to the Naval Recruiting Station, Boston.

Backus, J. W., P. A. surgeon, detached from duty at the Naval Hospital, Naval Training Station, Detroit.

Farwell, W. G., P. A. surgeon, detached from duty at the Naval Hospital, Naval Home, Philadelphia, March 22, and ordered to the Naval Station, Guantanamo, Cuba, sailing from New York about March 26.

Owens, W. D., P. A. surgeon, detached from the *Southery* and ordered to temporary duty on board the *Buffalo* and thence to duty with the marine detachment, Legation guard, Pekin, China.

Riggs, R. E., P. A. surgeon, detached from the *Texas* and ordered to duty with the marine detachment, Port Royal, S. C.

Winn, C. K., asst.-surgeon, detached from the *Missouri* and ordered to duty at the Naval Hospital, Newport, R. I.

Ames, M. H., asst.-surgeon, detached from the *New Jersey* and ordered to the *Southery*.

Ledbetter, R. E., surgeon, detached from the Navy Yard, Norfolk, Va., and ordered to the Naval Medical School, Washington, D. C., for instruction, April 15.

Murphy, J. F., P. A. surgeon, detached from the Naval Station, Culebra, W. I., and ordered to the Naval Medical School, Washington, D. C., for instruction, April 15.

Asserson, F. A., P. A. surgeon, detached from the *Kansas* and ordered to the Naval Hospital, Boston.

Fiske, C. N., P. A. surgeon, detached from the Naval Recruiting Station, Minneapolis, and ordered to Washington, D. C., March 31, for examination for promotion, and then to wait order.

Flint, J., asst.-surgeon, detached from the *Connecticut* and ordered to the Naval Hospital, Naval Home, Philadelphia.

Haynes, J. P., asst.-surgeon, detached from the *Virginia* and ordered to the Navy Yard, Norfolk, Va., April 10.

Persons, R. V., detached from the Naval Hospital (command of), Mare Island, Cal., and ordered to command the Naval Hospital, Naval Home, Philadelphia.

Simons, M. H., medical inspector, detached from command of the Naval Hospital, Philadelphia, and ordered to command the Naval Hospital, Mare Island, Cal.

McDonald, P. E., P. A. surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to duty at the Naval Hospital, New York.

Hoen, W. S., P. A. surgeon, detached from the Naval Recruiting Station, Oklahoma, Okla., and ordered to the Naval Hospital, Las Animas, Colo.

Rodman, S. S., P. A. surgeon, detached from the Naval Recruiting Station, Chicago, and ordered to the Naval Medical School, Washington, D. C., for instruction, April.

Geiger, A. J., P. A. surgeon, detached from the *Supply* and ordered to the Naval Hospital, Mare Island, Cal.

Munger, C. B., asst.-surgeon, detached from the Naval Proving Ground, Indian Head, Md., and ordered to the Naval Medical School, Washington, D. C., for instruction, April 15.

Reed, T. W., asst.-surgeon, detached from the *Colorado* and ordered to the Navy Yard, Mare Island, Cal.

Kuder, W. S., asst.-surgeon, detached from the *Minnesota* and ordered to the Navy Yard, Philadelphia.

Hayward, A. B., asst.-surgeon, detached from the Naval Recruiting Station, Dallas, Texas., and ordered to temporary duty on board the *Independence* and thence to the *Colorado*.

(Orders issued by the commander-in-chief of the Pacific Fleet:)

Farenholt, A., surgeon, detached from the *Maryland* and ordered to the *West Virginia*.

Raison, T. M., asst.-surgeon, detached from the *West Virginia* and ordered to the *Maryland*.

Bertolette, D. N., medical director, detached from the Naval Recruiting Station, Philadelphia, and ordered to command the Naval Hospital, Washington, D. C.

Nash, F. S., surgeon, detached from the Navy Yard, Washington, D. C., and ordered to the Naval Recruiting Station, Philadelphia.

Stone, E. P., surgeon, detached from the *Rhode Island*, and ordered to the Navy Yard, Boston.

Allen, A. H., asst.-surgeon, detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the Naval Recruiting Station, Oklahoma, Okla.

The following assistant-surgeons have been detached from instruction at the Naval Medical School, Washington, D. C.:

Lane, H. H., to the Naval Station, Hawaii.

Allen, D. G., to third squadron, Pacific Fleet. (Passage on *Buffalo*, May 15.)

Smith, C. W., to Naval Hospital, Naval Home, Philadelphia.

Whiteside, L. C., to the *New Jersey*.

Pollard, J. B., to the *Missouri*.

Stanley, A. C., to the *Virginia*.

McDowell, R. W., to the *Connecticut*.

Mackenzie, E. G., to the *Kansas*.

Shippen, L. P., to the Naval Recruiting Station, Minneapolis.

Schmidt, L. M., to the Naval Recruiting Station, Chicago.

Sterne, C. F., to the Naval Recruiting Station, St. Louis.

Shepard, G. W., to the Naval Station, Culebra, W. I., March 27, 1909.

Toulon, A. J., to the *Supply*, April 10, 1909.

Johnson, L. W., to the *Minnesota*.

Chambers, W., to the Naval Recruiting Station, Dallas, Texas.

Noble, D. H., and Dodge, A. H., to Naval Hospital, Las Animas, Colo.

Henry, R. B., to the Naval Magazine, Iona Island, N. Y.

Whitmore, G. B., to the Naval Proving Ground, Indian Head, Md.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended March 17, 1909:

Cobb, J. O., surgeon, granted 2 days' leave of absence from March 9, 1909, on account of sickness.

Wertenbaker, C. P., surgeon, directed to report at Bureau on special temporary duty, and on completion of the duty to rejoin his station.

Young, G. B., surgeon, detailed to represent the service at the fifth annual conference of the Council on Medical Education of the American Medical Association to be held in Chicago April 5, 1909.

Rosenau, M. J., surgeon, directed to proceed to Philadelphia on special temporary duty.

Nydegger, James A., surgeon, on the arrival of P. A. Surgeon Charles W. Vogel, directed to proceed to Pittsburg, Pa., and assume charge of the Service.

Lavinder, C. H., P. A. surgeon, detailed to represent the Service at the sixth annual meeting of the American Society of Tropical Medicine, to be held in Washington, D. C., April 10, 1909.

Anderson, John F., P. A. surgeon, directed to proceed to Detroit on special temporary duty.

Ramus, Carl, P. A. surgeon, granted 2 days' leave of absence from March 4, 1909, on account of sickness.

Vogel, Charles W., P. A. surgeon, relieved from temporary duty at the Hygienic Laboratory and directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

McCoy, George W., P. A. surgeon, directed to proceed to Berkeley, Cal., on special temporary duty.

Creel, Richard H., P. A. surgeon, relieved from temporary duty at the Hygienic Laboratory and directed to proceed to Chicago and report to the medical officer in command for duty and assignment to quarters.

Creel, Richard H., P. A. surgeon, granted 4 days' leave of absence en route to station.

Ashford, Francis A., asst.-surgeon, on arrival of Asst.-Surgeon R. M. Grimm directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

Grimm, R. M., asst.-surgeon, on the arrival of P. A. Surgeon R. H. Creel directed to proceed to San Juan, P. R., and report to the commanding officer of the U. S. Revenue Cutter *Algonquin*.

Fogarty, J. M., acting asst.-surgeon, granted 10 days' leave of absence from March 16, 1909.

Health Reports

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended March 19, 1909.

SMALLPOX—UNITED STATES

Arkansas: Bethal, Jan. 25, 3 cases; Jonesboro, Jan.20-March 1, 20 cases; Paragould, Feb. 1-March 9, 7 cases.

California: Oakland, Jan. 1-31, 4 cases; San Francisco, Feb. 20-27, 6 cases.

District of Columbia: Washington, Feb. 20-27, 1 case.

Illinois: Benld, Feb. 15-18, 2 cases; Chicago, Feb. 27-March 6, 2 cases; Danville, March 1-7, 4 cases; Galesburg, Feb. 27-March 6, 1 case.

Indiana: Elkhart, Feb. 28-March 6, 2 cases; Lafayette, March 1-8, 1 case.

Iowa: Council Bluffs, Jan. 1-31, 9 cases; Feb. 1-28, 4 cases.

Kansas: Kansas City, Feb. 27-March 6, 1 case; Topeka, Feb. 20-27, 6 cases.

Kentucky: Covington, Feb. 27-March 6, 3 cases; Georgetown, Dec. 2-March 4, 31 cases; Paducah, March 1-7, 2 cases.

Louisiana: Alexandria, Feb. 1-28, 9 cases; New Orleans, Feb. 29-March 6, 1 case, imported.

Michigan: Detroit, Feb. 20-March 6, 2 cases.

Minnesota: Minneapolis, Feb. 27-March 6, 11 cases.

Missouri: Kansas City, Feb. 27-March 6, 2 cases; St. Louis, Feb. 27-March 6, 2 cases.

Montana: Butte, Feb. 16-March 2, 2 cases.

Nebraska: Arlington, Jan. 25, 1 case; South Omaha, Feb 20-27, 5 cases.

New Jersey: Camden, Feb. 27-March 6, 2 cases; Perth Amboy, March 10, 6 cases.

New York: Buffalo, Feb. 28-March 6, 1 case; New York, Feb. 22-27, 1 case, 1 death.

Ohio: Cincinnati, Feb. 26-March 5, 9 cases; Cleveland, Feb. 26-March 5, 2 cases; Columbus, Feb. 28-March 6, 1 case.

Pennsylvania: New Castle, Feb. 1-28, 2 cases; Prompton, Feb. 2-March 4, 8 cases.

Tennessee: Memphis, Jan. 1-31, 61 cases; Nashville, Feb. 28-March 6, 10 cases.

Texas: El Paso, Feb. 23-March 2, 1 death; San Antonio, Feb. 27-March 6, 3 cases.

Utah: General, Jan. 1-31, 237 cases, 1 death.

Virginia: Caroline county, March 9, 1 case.

Washington: Tacoma: Feb. 14-March 7, 8 cases.

Wisconsin: La Crosse, Feb. 27-March 6, 2 cases.

SMALLPOX—FOREIGN

Algeria: Algiers, Jan. 1-31, 29 deaths.

Canada: Halifax, Feb. 20-27, 6 cases.

China: Dalny, Jan. 23-30, 1 death; Tientsin, Jan. 23-30, 5 cases, 1 death.

Egypt: Alexandria, Jan. 1-31, 8 cases; Cairo, Jan. 28-Feb. 4, 33 cases, 12 deaths.

France: Paris, Feb. 6-12, 4 cases, 1 death.

Germany: Brunswick, Feb. 13-20, 1 case.

Great Britain: Bristol, Feb. 13-20, 4 cases.

India: Bombay, Feb. 2-9, 12 deaths; Calcutta, Jan. 16-30, 181 deaths; Madras, Jan. 30-Feb. 5, 1 death; Rangoon, Jan. 23-30, 2 deaths.

Italy: General, Feb. 14-28, 15 cases; Naples, Feb. 14-21, 21 cases, 5 deaths; Palermo, Jan. 23-30, 1 case.

Java: Batavia, Jan. 16-23, 3 cases.

Malta: Feb. 1-13, 2 cases.

Mexico: Jan. 23-Feb. 6, 19 deaths; Veracruz, Feb. 1-27, 1 case.

Persia: Arabistan, Feb. 3, present; Mechedisser, Feb. 3, present; Mohammerah, Feb. 3, present.

Portugal: Lisbon, Feb. 13-20, 1 case.

Russia: Moscow, Jan. 30-Feb. 13, 2 cases; St. Petersburg, Jan. 30-Feb. 6, 7 cases, 5 deaths; Warsaw, Jan. 2-9, 1 death.

Spain: Almeria, Jan. 1-31, 1 death; Barcelona, Jan. 23-Feb. 13, 15 deaths, Valencia, Feb. 6-13, 3 cases.

Tripoli: Tripoli, Feb. 6-13, 4 cases.

Turkey: Constantinople, Feb. 7-21, 4 deaths; Trebizond, Feb. 6-20, present.

YELLOW FEVER

Barbadoes: General, to Feb. 27, 54 cases, 16 deaths; Feb. 27-March 6, 2 cases.

Ecuador: Guayaquil, Feb. 6-13, 4 deaths.

Mexico: Merida, Feb. 21-March 6, 2 cases, 1 death; Ticul, Feb. 21-March 6, 1 case.

CHOLERA

India: Bombay, Feb. 2-9, 4 deaths; Calcutta, Jan. 16-30, 26 cases; Madras, Jan. 30-Feb. 5, 2 deaths; Rangoon, Jan. 23-30, 1 death.

Russia: General, Jan. 17-24, 304 cases, 129 deaths; Jan. 24-30, 201 cases, 60 deaths; St. Petersburg, Jan. 24-30, 193 cases, 52 deaths; Feb. 12, 43 cases.

PLAGUE

China: Amoy, March 16, present.

Ecuador: Guayaquil, Jan. 6-23, 14 deaths.

Egypt: Suakim, Feb. 1, 1 case.

India: General, Jan. 30-Feb. 6, 3,663 cases, 3,076 deaths; Bombay, Feb. 2-9, 28 deaths; Calcutta, Jan. 16-30, 27 deaths; Rangoon, Jan. 23-30, 21 deaths.

Turkey: Bagdad, Jan. 16-23, 4 cases, 2 deaths.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 5-6. Sec., Dr. Ancil Martin.

ARKANSAS: Three boards, each at Little Rock, April 13. Regular Sec., Dr. F. T. Murphy, Brinkley; Homeopathic Sec., Dr. P. C. Williams, Texarkana; Eclectic Sec., Dr. A. J. Widener, Little Rock.

CALIFORNIA: San Francisco, April 6. Sec., Dr. Charles L. Tisdale, Butler Bldg.

COLORADO: Denver, April 6. Sec., Dr. S. D. VanMeter, 1723 Tremont St.

DISTRICT OF COLUMBIA: Washington, April 13-16. Sec., Dr. George C. Ober, 210 B St., S. E.

IDAHO: Boise, April 6-7. Sec., Dr. W. F. Howard, Pocatello.

ILLINOIS: Northwestern University Bldg., Chicago, April 15-17. Sec., Dr. J. A. Egan, Springfield.

MINNESOTA: Old Capitol, St. Paul, April 6-9. Sec., Dr. W. S. Fullerton, 214 Am. National Bank Bldg.

MONTANA: The Capitol, Helena, April 6. Sec., Dr. W. C. Riddell

NEW MEXICO: Santa Fe, April 12. Sec., Dr. J. A. Massie.

NORTH DAKOTA: Grand Forks, April 6-8. Sec., Dr. H. M. Wheeler

OKLAHOMA: Guthrie, April 13. Sec., Dr. Frank P. Davis, Enid.

RHODE ISLAND: State House, Providence, April 1-2. Sec., Dr. Gardner T. Swarts, 315 State House.

UTAH: Salt Lake City, April 5-6. Sec., Dr. R. W. Fisher.

WEST VIRGINIA: Huntington, April 13-15. Sec., Dr. H. A. Barbee, Point Pleasant.

Arizona January Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, January 4-5, 1909. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 4, of whom 2 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED.		
Georgetown University	(1907)	88.2
College of Physicians and Surgeons, Baltimore	(1889)	87.7
FAILED		
Western Reserve University	(1896)	42.9
Willamette University	(1902)	69.6

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, January 7-8, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 8, of whom 4 passed and 4 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Baltimore Medical College	(1907) 80; (1908)	90.1
Jefferson Medical College	(1904)	86.1
Laval University, Quebec	(1908)	80.6
FAILED		
Baltimore Medical College	(1905) 72.9; (1907)	72.6
Laval University, Quebec	(1905)	69.2
University of Naples, Italy	(1905)	68.6

Marriages

HORACE T. SADLER, M.D., to Miss Helen Bosler, both of Carlisle, Pa., March 6.

GEORGE W. FAMOUS, M.D., Berwyn, Pa., to Miss J. Gertrude Cope, of Philadelphia, Pa., March 9.

CARL STOEHR, M.D., Big Stone Gap, Va., to Miss Elizabeth Rucker, of Washington, D. C., March 6.

HARRY HUGH ELLS, M.D., Charlotte, Mich., to Miss Marie Rowland Van Verst, of Detroit, March 18.

JOHN ADAM KAPPELMANN, M.D., Evanston, Ill., to Miss Jennie Hanson of Oak Park, Ill., March 18.

D. M. RYAN, M.D., Indian Mills, W. Va., to Miss Norene Myrtle Garten, of Forest Hill, W. Va., March 3.

ALFRED B. TUCKER, M.D., to Miss Martha Jones, both of Berryville, Va., at Waynesboro, N. C., March 11.

ARCHELAUS ERNEST TURRENTINE, M.D., Charleston, Miss., to Miss Mildred Davis, of Blytheville, Ark., March 16.

Deaths

Ferdinand Carl Hotz, M.D., one of the oldest and best known ophthalmologists of Chicago, died March 21, from pneumonia, aged 65. He was born in Wertheim, Germany, and after study in Jena graduated in medicine from the University of Heidelberg in 1865. He served as surgeon in the South German Army during the Austro-Prussian war in 1866, during 1867 and 1868 he was assistant surgeon to Knapp's Eye Clinic, Heidelberg, and a year later came to the United States and located in Chicago. He has been ophthalmic surgeon to the Illinois Charitable Eye and Ear Infirmary since 1876; professor of ophthalmology in the Chicago Polyclinic since 1888, and professor of ophthalmology and otology in Rush Medical College since 1898, and oculist to Cook County and Presbyterian hospitals. He was a member of the American Medical Association; one of the founders and once president of the Chicago Ophthalmological Society. He was made a director of the Chicago Public Library in 1875 and held this position until his death. His contributions to ophthalmologic literature have been frequent and valuable.

John C. Corbus, M.D. Cleveland (Ohio) Medical College, 1855; a member of the American Medical Association; surgeon of the Seventy-fifth Illinois Volunteer Infantry during the Civil War; for 27 years a member and for 12 years president of the State Board of Charities; from 1898 to 1906 superintendent of the Illinois Eastern Hospital for the Insane, Hospital; and for fifteen years a member of the board of U. S. Pension Examining Surgeons; died at the home of his son in Mendota, March 17, aged 75.

Dillon Brown, M.D. Harvard Medical School, Boston, 1885; professor of diseases of children in the University of Vermont; and adjunct professor of diseases of children in the New York Polyclinic; professor of pediatrics in the New York School of Clinical Medicine; physician to the New York Children's Hospital; editor of the *Journal of Pediatrics;* for many years house physician for the Savoy and Netherlands hotels, died at his home in New York City, March 16, from malignant disease, aged 48.

John Samuel Brownlee, M.D. Missouri Medical College, St. Louis, 1890; a member of the State Medical Association of Texas; and for 31 years a practitioner of that state; for eight years a member of the district examining board; for fifteen years health officer of Burnet county; and for several terms president of the Burnet County Medical Society; died at his home in Burnet, February 8, from heart disease, aged 56.

Robert George Redd, M.D. Ohio Medical College, Cincinnati, 1869; Bellevue Hospital Medical College, New York City, 1871; surgeon in the Army for about twenty years; and later surgeon for the Northern Pacific Railroad at Miles City, Mont.; at one time mayor of that city, and a member of the state senate; died at the home of his son in Crab Orchard, Ky., February 21, from locomotor ataxia, aged 66.

Hamilton Dox Wey, M.D. New York University, New York City, 1878; a member of the American Medical Association; president of the Medical Society of the State of New York in 1904 and 1905; a member of the Elmira Academy of Medicine; consulting physician to the Arnot-Ogden Memorial Hospital, Elmira; died in Callao, Peru, where he had gone for his health, March 16, aged 54.

John Lawrence Cleary, M.D. Pulte Medical College, Cincinnati, 1878; a veteran of the Civil War; a member of the State Medical Society of Wisconsin, and a charter member of the Kenosha County Medical Society; for two terms a member of the Wisconsin State Board of Control; died at his home in Kenosha, from cancer of the face, March 12, aged 62.

James H. Hamilton, M.D. Castleton (Vt.) Medical College, 1859; a member of the American Medical Association; acting assistant surgeon in the P. H. and M.-H. Service; for many years secretary of the Vermont State Board of Health; and at one time a member of the state legislature; died at his home in Richford, Vt., March 14, from nephritis, aged 73.

Alonzo Bishop Adams, M.D. Medical School of Maine, Brunswick, 1869; of East Wilton, Maine; a member of the Maine Medical Association; a veteran of the Civil War; secretary of the local board of health; and a member of the local board of U. S. Pension Examining Surgeons; died March 10, two days after an operation for appendicitis, aged 68.

Elias Carey Kitchin, M.D. Castleton (Vt.) Medical College, 1850; assistant surgeon of the Twenty-first Pennsylvania Volunteer Cavalry, and surgeon of the One Hundred and Fifty-fifth Pennsylvania Volunteer Infantry during the Civil War; died at his home near Brumfieldville, Pa., March 13, from senile debility, aged 81.

Sinclair Holden Glasgow, M.B. University of Toronto, 1878; M.D. University of the Victoria College, Coburg, Ont., 1878; lieutenant colonel of the Second Dragoons; president of the Ontario Medical Association; and division surgeon of the Grand Trunk Railway; died at his home in Welland, Ont., March 13, aged 53.

James B. R. Purnell, M.D. University of Maryland, Baltimore, 1850; vice-president of the Medical and Chirurgical Faculty of Maryland in 1900 and 1901; formerly physician to the county almshouse and health officer of Worcester county; died at his home in Snow Hill, March 7, from senile debility, aged 80.

James E. C. Sullivan, M.D. Louisville (Ky.) Medical College, 1872; of Cairo, Ill.; for many years a member of the American Medical Association; and a member of the Illinois State Board of Health; died in the Alexian Brothers Hospital, St. Louis, March 12, after a prolonged illness, aged 64.

George A. Dougherty, M.B.; C.M. University of Glasgow, Scotland, 1865; a member of the Medical Society of the State of Pensylvania; a member of the staff of the City Hospital, Washington, Pa.; died at his home in that city, March 12, from valvular heart disease, aged 69.

James William Walker, M.D. Bellevue Hospital Medical College, New York City, 1893; health officer and coroner of Lincoln, and later health officer of Pawtucket, R. I.; died at the Brown Hospital, Providence, R. I., March 13, after an operation for intestinal obstruction, aged 47.

James W. Bennett, M.D. Tulane University, New Orleans, 1859; a member of the Mississippi State Medical Association; and one of the oldest and most esteemed practitioners of southern Mississippi; died at his home in Brookhaven, March 13, from heart disease, aged 81.

John Franklin Minor, M.D. University of California, San Francisco, 1876; for several years surgeon on steamers of the Pacific Mail Steamship Company; and a practitioner of Alameda, Cal.; died suddenly in that city, from heart disease, March 11, aged about 50.

John James O'Connor, M.D. Harvard Medical School, Boston, 1888; a member of the American Medical Association; and for twenty years a practitioner of Holyoke, Mass.; died in the House of Providence Hospital, in that city, March 13, from nephritis, aged 44.

F. A. Alcibiades Belinge, M.D. Cooper Medical College, San Francisco, 1870; of Los Gatos, Cal.; formerly president of the Medico-Chirurgical Society of San Francisco; and a member of the commission on insanity; died in Lane Hospital, San Francisco, March 14.

Henry Tilford Nock, M.D. Hospital College of Medicine, Louisville, 1907; interne in the Kingston Avenue Hospital for Contagious Diseases, Brooklyn, N. Y.; died in the Kings County Hospital, Brooklyn, February 19, from yellow atrophy of the liver, aged 24.

Robert Andrews, M.D. Eclectic Medical College of Philadelphia, 1861; a member of the Medical Society of the State of New York and president of the village of Bergen for five terms; died at his home March 9, from dilatation of the heart, aged 72.

Erastus L. Wilson, M.D. College of Physicians and Surgeons, Baltimore, 1889; physician to the town of Lisbon, Maine; formerly a practitioner of Howard, R. I.; died suddenly while making a professional call in Durham, Maine, March 1.

Joseph J. Lawrence, M.D. Eclectic Medical Institute, Cincinnati, 1858; founder and for many years editor of the *Medical Brief*, St. Louis; a Confederate veteran; died at his home in New York City, March 14, from cerebral hemorrhage, aged 72.

Jabez V. Childers, M.D. University of Pennsylvania, Philadelphia, 1859; surgeon of the Third Tennessee Infantry, C. S. A., throughout the Civil War; a resident of Dallas, Texas, for 37 years; died at his home in that city, March 9, aged 76.

John G. Duckworth, M.D. College of Physicians and Surgeons, Baltimore, 1875; a member of the South Carolina Medical Association; died at his home near Anderson, S. C., from cerebral hemorrhage, February 10, aged about 60.

Noah F. Baker, M.D. St. Louis (Mo.) Medical College, 1868; a member of the American Medical Association; a Confeder-

ate veteran; died at his home in Fulton, Mo., March 2, from septicemia, due to an operation wound, aged 63.

J. Norman Davies, M.D. Hahnemann Medical College, Chicago, 1891; a member of the visiting staff of the Warren (Pa.) Emergency Hospital; died suddenly at his home in Warren, February 28, from heart disease, aged 38.

William R. Briscoe, M.D. Dublin, Ireland, 1859; of Arthur City, Texas; a member of the State Medical Association of Texas; a veteran of the Civil War; died at the home of his daughter near Direct, Texas, January 29.

Abram H. Wallace, M.D. Kentucky School of Medicine, Louisville, 1892; a member of the Medical Society of the State of California; died suddenly from heart disease in his office in Los Angeles, March 8, aged 47.

Harrison Allison Winters, M.D. Rush Medical College, Chicago, 1881; of Chattanooga, Tenn.; died at the Erlanger Hospital in that city, March 7, from the effects of a fracture of the femur in June last, aged 55.

Edmund Cantwell Gibbs, M.D. University of Maryland, Baltimore, 1884; a member of the Medical and Chirurgical Faculty of Maryland; died at his home in North Baltimore, March 8, from nephritis, aged 52.

Albert F. Lange, M.D. St. Louis College of Physicians and Surgeons, 1903; who was struck by an automobile, February 24, and seriously injured, died at his home in St. Louis from thrombosis, March 5, aged 34.

Samuel Groome Fisher, M.D. University of Maryland, Baltimore, 1854; for more than 50 years a practitioner of Chestertown, Md.; died at the home of his son in Port Deposit, Md., February 22, aged 77.

George B. Christy, M.D. Western Reserve University, Cleveland, 1859; chief surgeon of the Fifth Army Corps during the Civil War; died at his home in Dunlap, Iowa, February 26, from pneumonia, aged 79.

Benjamin Franklin Laughlin, M.D. University of Maryland, Baltimore, 1904; of Kingwood, W. Va.; died at the home of his father in Deer Park, Md., from paralysis, March 9, aged 31.

William H. Sage, M.D. Yale University, New Haven, 1849; for 30 years a practitioner of New Haven; died from cerebral hemorrhage at his home in Woodbury, Conn., March 10, aged 83.

Charles Miller Dalsen, M.D. Jefferson Medical College, Philadelphia, 1880; of Philadelphia; died at the home of his daughter in that city, March 2, from senile debility, aged 82.

Howard H. Cheyney, M.D. Hahnemann Medical College, Philadelphia, 1875; of Williamsport, Pa.; died in the Hahnemann Hospital, Philadelphia, March 5, from nephritis, aged 54.

George Waters Cleland, M.D. Savannah (Ga.) Medical College, 1854; of Wagoner, Okla.; died at the home of his daughter in that city, January 21, from nephritis, aged 80.

William Edmund Burgar, M.D. College of Physicians and Surgeons, Ont., 1868; died suddenly at his home in Welland, Ont., March 14, from cerebral hemorrhage, aged 68.

Samuel C. Price, M.D. Kansas City (Mo.) Medical College, 1870; of Joplin, Mo.; a veteran of the Civil War; died in Los Angeles, Cal., February 28, aged 69.

Francis V. Schley, M.D. Atlanta (Ga.) Medical College, 1891; city physician of Columbus, Ga., since 1898; died at his home from meningitis, March 14, aged 50.

Olin J. DeLoach, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1906; of Mascotte, Fla.; died at his old home in Glennville, Ga., March 11, aged 24.

Herman Louis Molter, M.D. Baltimore (Md.) Medical College, 1900; died at his home in North Plymouth, Mass., February 20, from pneumonia, aged 31.

Allen Victor Kelly, M.D. Baltimore (Md.) University, 1892; died at his home in Waterbury, Conn., March 10, from typhoid fever, aged 44.

Robert Ingram Wilson, M.D. New York University, New York City, 1879; died at his home near Swannanoa, N. C., March 8.

Charles Edward Barnhart, M.D. Toronto School of Medicine, 1859; died at his home in Owen Sound, Ont., February 10, aged 76.

L. J. Turner, M.D. University of Georgia, Augusta, 1876; died at his home near Rockdale, Texas, January 30, aged 69.

P. S. Tribbey, M.D. Cincinnati College of Medicine and Surgery, 1871; died at his home in Secor, Ill., March 9, aged 87.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Medical Expert Testimony

The report of the committee on the regulation of the introduction of medical expert testimony, presented at the annual meeting of the New York State Bar Association, has just been received. This committee, of which Hon. A. T. Clearwater of Albany is chairman, and which consists of one member from each judicial district of the state, was instructed to confer with a committee appointed by the Medical Society of the State of New York regarding medical expert testimony. The New York Academy of Medicine and the Homeopathic Medical Society of New York were also invited to participate in the conference through properly appointed committees. A joint meeting of the entire committee was held in New York City and the subject thoroughly discussed.

The committee is of the opinion that, theoretically, an expert is a scientist interested solely in facts, who should retain freedom of judgment and liberty of speech and should be free from the embarrassment of any personal relations to or with the parties to an action. He should speak judicially as the representative of the special branch of science which he invokes and should at all times be treated with respect and have the protection of the court. No one should be permitted to distort, pervert or misrepresent his testimony. He should have no client to serve and no partisan interests or opinions to vindicate.

Not until the expert witness complies with these conditions is it possible to rescue expert testimony from the disrepute into which it has fallen and elevate it to its true position. Scientific open-mindedness is almost impossible where the expert depends entirely for his emolument on the good graces of the contending parties. The commercializing of scientific knowledge under the existing conditions lessens its accuracy and value. The enormous modern development of special knowledge makes doubt and controversy among experts hired to create it inevitable. The gravest abuses, not to say scandals, have arisen in the introduction of medical expert testimony, until it has come commonly to be believed that such witnesses are so biased that hardly any weight should be given to their opinions. The committee unanimously agreed that the methods now pursued do not subserve the ends of justice, and summarize the existing evils as follows:

1. Want of satisfactory standards of expertness, with the result of inviting the testimony of charlatans.
2. The partisan conflicting and hence unreliable character of the evidence often given by so-called expert witnesses.
3. The prolongation of trials and the consequent increase of expense on account of the number of witnesses.
4. The confusing effect on juries of the contradictory testimony of expert witnesses of apparently equal standing.
5. Lack of scruple on the part of some members of the bar in countenancing the hiring by their clients of unprincipled self-styled experts to support causes by specious and untruthful testimony.
6. An unfortunate tendency on the part of some trial judges to permit incompetent, so-called medical experts to testify to opinions predicated on widely unrelated facts and under oath to express views which are but the speculative vagaries of ill-informed minds.

The committee concludes that the remedy for these evils lies with the bench and bar rather than with resort to restrictive legislation, and recommends that judges require a greater degree of competence on the part of persons claiming to be experts by the simple but effective method of defining to a jury with force and precision the distinction between a witness proved to be thoroughly qualified and one whose claim to speak is predicated principally on the fact that he is paid to do so. The committee holds that the bar is not blameless for the present condition of affairs, as some of its members connive at the hiring of corrupt and incompetent

so-called experts and also are responsible for the practice of discrediting the testimony of the witness by disconcerting him in cross-examination. The committee presented the bill which it had framed for presentation to the legislature and asked for the adoption of a resolution approving of the bill and urging its passage.

The bill referred to provides that within ninety days after the passage of the act that justices of the Supreme Court of the state shall designate not less than ten nor more than sixty physicians in each judicial district, who may be called as medical expert witnesses by the trial court or by any party to a civil or criminal action in any courts of the state, and who shall when so called, testify and be subject to full examination and cross-examination as are other witnesses. This act is not intended to limit the right of parties to call other expert witnesses as heretofore, but establishes a corps of recognized experts in each judicial district, who have the stamp of approval of the court, and who may be called by the trial judge to testify regarding scientific matters.

The investigations of the committee showed that only two states, Michigan and Rhode Island, have any statutory provisions regulating expert testimony. A bill has this year been introduced into the Maine legislature, mention of which has already been made in THE JOURNAL. It is gratifying to note this evidence of interest in this important subject, and it is to be hoped that cooperation between medical and legal organizations may be secured in other states and that the solution of this important but perplexing problem may be worked out.

The Future of Osteopathy

A summary of the bills now before the Massachusetts legislature of interest to physicians appears in the *Boston Medical and Surgical Journal*, March 11. Most of the measures commented on have already been mentioned in THE JOURNAL. One bill not yet mentioned is House Bill 1340, which relates to the granting of degrees by the Massachusetts College of Osteopathy. It provides that this institution shall be empowered to grant the degree of doctor of medicine to its graduates.

To those who have followed the history and development of osteopathy in the past ten years, this is exceedingly significant. At the time that the osteopathic advocates first appeared before state legislatures asking for legal recognition of their cult and the establishment of state boards of examiners for their followers, it was insisted on by members of the medical profession, interested in maintaining a high standard of medical education that this new movement, like all sectarian movements, was merely an effort to introduce a cheaper and less scientifically educated class of physicians and that, in reality, it was merely a "back door" to the medical profession, admitting persons to the duties, responsibilities and privileges of physicians who had not complied with the existing standards of qualification. This was indignantly denied by the osteopathic advocates, who declared that osteopathy was not a practice of medicine, that it was something entirely different and that it was not and never would become a "school" of medicine. The fields of obstetrics, surgery, both major and minor, contagious diseases, issuing of birth and death certificates, and even in some cases, the appointment of quarantine and health officers, all, so far as possible, have been invaded by these people who have nevertheless insisted constantly that "osteopathy and the practice of medicine are two separate and distinct things." The introduction of courses in surgery, the attempts at instruction in asepsis and antisepsis and bacteriology in the "progressive" osteopathic schools are but tacit acknowledgments of the objects more clearly avowed by the Massachusetts College of Osteopathy.

We venture the assertion that if this sect is still in existence at the end of ten years, the schools of instruction maintained by its adherents will all have become "schools" of medicine, conferring the degree of doctor of medicine and constituting another group of poorly equipped schools with low standards of admission and instruction, analogous to the lower grade medical colleges of the present day and constituting additional material for the reputable and progressive portion of the medical profession to digest and assimilate slowly at the cost of great labor and with the lowering of the general standards of the profession.

The effort of the Massachusetts College of Osteopathy to gain such a right should be noted in all of the states in which osteopathic legislation is being urged as an evidence of the manifest tendency of this sect and the speciousness of its arguments and claims.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Fourth Weekly Meeting

COMBINED SYSTEM DISEASES

ATAXIC PARAPLEGIA.—Pathology: Changes in dorsal and lateral columns. Arterial changes. Symptoms: Sensory symptoms, gait, reflexes, muscular rigidity, incoördination.

PRIMARY COMBINED SCLEROSIS (PUTNAM).—Changes in cord. Age, sex, association with anemia. Symptoms.

HEREDITARY (FRIEDRICH'S) ATAXIA.—Symptoms. Characteristic gait, ataxia of arms, static ataxia. Reflexes, sensory symptoms, nystagmus. Deformities. Speech.

DISEASES OF THE NERVES

NEURITIS.—1. Localized.—Etiology: Cold, trauma, occupation palsies, pressure from tumors, etc. Symptoms: Pain; location, character, distribution. Local manifestations. Motor disturbances. Migratory neuritis. Electrical reactions. Prognosis.

2. Multiple.—Etiology: Infectious diseases, organic poisons, in cachexia of anemia, cancer, etc., beri-beri. Pathology: (a) Interstitial, (b) parenchymatous neuritis. Symptoms: (a) Acute Febrile Polyneuritis. Onset, clinical history, sensory and motor disturbances. Course, differentiation. Recurring polyneuritis. (b) Alcoholic Neuritis. Onset, clinical course, sensory and motor manifestations, mental symptoms. Prognosis. (c) Multiple Neuritis in Infectious Diseases. Diphtheria, tuberculosis, typhoid, scarlatina, etc. Course and prognosis. (d) Neuritis from Metallic Poisons. Arsenic from medicinal use, food and drink. Lead, mercury and zinc. (e) Beri-beri. Distribution. Theories of causation.

DISEASES OF SPINAL NERVES

CERVICAL PLEXUS.—1. Occipito-Cervical Neuralgia. Etiology. Nerves involved. Symptoms.

2. Phrenic Nerve. (a) Paralysis: Etiology; lesions of cord, compression, neuritis, diphtheria, lead, etc. Symptoms. (b) Hiccough: Etiologic classification (Symes), inflammatory, irritative, specific, neurotic; causes of each.

BRACHIAL PLEXUS.—1. Combined Paralysis. Etiology: compression, trauma, fractures, dislocations, neuritis, "obstetrical palsy."

2. Individual Nerves. (a) Long thoracic, (b) circumflex, (c) musculo-spiral, radial, (d) ulnar, (e) median; etiology and symptoms of each.

LUMBAR PLEXUS.—(a) Obturator, (b) anterior crural, (c) gluteal, (d) external cutaneous, "meralgia paresthetica."

SACRAL PLEXUS.—Pelvic inflammation or tumors, parturition, neuritis. Paralysis of (a) sciatic, (b) small sciatic, (c) external popliteal, (d) internal popliteal. Sciatica: Etiology; age, sex, rheumatism, injury, compression, spinal arthritis. Treatment. Mechanical, constitutional, rest and fixation; local treatment.

MONTHLY MEETING

The Topical Diagnosis of Lesions of the Cord.
Early Diagnosis and Treatment of Locomotor Ataxia.
Etiology and Symptomatology of Acute Anterior Poliomyelitis.

Miscellany

A Newspaper's Views of the Antivivisectionists

The following is from the *North American*, Philadelphia, Feb. 8, 1909:

"All history, we believe, bears out our belief that most of the deadly errors, the suffering and the calamities of the world have been caused less by malice and conscious criminality than by well-meaning ignorance. Within the past week Philadelphia has seen an instance of that type of ignorance which is an infectious disease, curable only by copious and repeated doses of truth, administered before the ailment has progressed into the acute stages of hysteria and fanaticism.

"Ordinarily the *North American* would not feel called on to discuss seriously the utterances of a young woman who adopts as the premises for her public arguments flat, dogmatic denials of the incontestably proved truths of science and the vital statistics of all civilized nations.

"But our legislative records prove only too plainly that the doctrine of which the attractive and plausible young woman from Sweden is a high priestess has found too many adherents for the safety of the community.

"Only the veto of the governor prevented this state from taking a long step back toward the dark ages by the passage of acts weakening the vaccination law and forbidding animal experimentation. And in the present session of the legislature there already is proof, in the harmful Article XV of the proposed public school law, that there is deliberate and organized purpose to force through legislation that will menace life and health and obstruct the progress of all preventive medicine.

"Concerning the various horrors of the torture of helpless animals in laboratories, which Miss Lind-af-Hageby details to her shuddering audiences, we can say only that in the exhaustive investigations of the Royal Commission on Vivisection in Great Britain there was utter failure to substantiate similar charges. And in the most noted case that has reached the courts, the defendant, who had quoted from an antivivisection book, was condemned to pay $10,000 damages and heavy costs, while the publisher withdrew the book from sale and made public apology to the libeled scientists.

"Incidentally, the author of that book was Miss Lind-af-Hageby.

"But it is easy to make arbitrary assertions and by dealing in generalities convey the impression that inhumane practices are prevalent. For most people do not know that there are only some forty laboratories in Germany, twenty in France, twenty in England, twenty in Italy and fifty in all other countries in which experiments on animals are made. An exceedingly large supposition would be the sacrifice of five victims a day in each of those 150 institutions.

"Considering the fact that at least two thousand million mammals die every year—in this country alone we slay and eat 50,000,000 beeves, sheep and hogs and 250,000,000 fowls annually—the number used for experimentation hardly seems to deserve the antivivisectionists' favorite term, 'holocaust.'

"Let it be remembered also that under the carefully enforced British act of Parliament it was shown last year that of 73,000 operations on animals, 96.5 per cent. were inoculations or hypodermic injections of a wholly painless character, while the remaining 3.5 per cent. were effectively anesthetized, according to the sworn testimony of the government inspectors.

"Such facts do not, however, apply to the theories of Miss Lind-af-Hageby, which we may summarize thus, in her own words:

"'I know that the torturing of a thousand dogs could never prevent the death of a single child.

"'I do not believe any benefit whatever can come to human beings through experiments made on animals.

"'I believe absolutely that all inoculation of children or grown persons with serum obtained from the diseased blood of animals is dangerous, and that in a large number of cases the serum introduced into the human blood is worse in its effect than the disease it is said to prevent or cure.

"'I do not believe that there has been any decrease in deaths from diphtheria since the introduction of the antitoxin.

"'Animal experimentation is wrong for two reasons: First, it is wrong to assume that man can in any way benefit by experiments made on animals.

"'In the second place, it is wrong because it is possible to arrive at just as conclusive results through chemical experimentation as through vivisection.'

"Now, apart from all recent discoveries in bacteriology, it is beyond dispute that all we know of the circulation of the blood, the processes of digestion, the growth of bone and the motor centers of the brain are due directly to experiments on animals.

"It was vivisection of what we may be asked to consider a 'sub-human'—a tadpole, to be exact—that led to our modern effective methods of combating most forms of blood-poisoning.

"It was vivisection and inoculation of animals that led to the discovery of tuberculin; of the serums, vaccines and antitoxins for lockjaw, rabies, cholera, plague, typhoid, cerebrospinal meningitis, diphtheria. It was vivisection and animal experiment that aided in the discovery of antiseptics and anesthetics—the entire basis of modern surgery.

"Surely none need be told that tuberculosis is not the hopeless curse it was. Were it not for animal experimentation the prospects of ultimately lifting this great burden of suffering and death from the human race would be as dark as it was before Klencke, in 1843, and Villemin, in 1865, succeeded in proving its infectious nature by experiments on animals with tuberculous material, and thus paved the way for Koch's discovery, in 1882, of the tubercle bacillus. The many researches which have flowed from the study of this germ have taught us already how to protect the healthy from infection, and are daily teaching us how we may restore to health those already infected.

"Concerning the calm assertion that no good has come of the diphtheria antitoxin, we have at hand indisputable statistics showing that in one country alone—France—the lives of 1,350,000 children have been saved in fifteen years.

"In the words of Dr. Charles Richet, 'this would be sufficient to justify the death of the twenty-five dogs and the 100 rabbits which I sacrificed, and of the 200 horses which Behring and Roux used for the preparation of the antidiphtheria serum.'

"A little sense of proportion is an excellent thing. A hundred weeping mothers; a hundred children gasping vainly for breath, the hope of a hundred mourning homes dead in the cradle—are we to count these nothing beside a rabbit which has had to receive a little blood of a dog into its abdomen?

"By animal experimentation yellow fever and the plague have been practically conquered. Meningitis is losing its terrors. We know how to prevent typhoid, and hope is strong that a cure for cancer may yet be discovered by the research that alone can make that possible.

"Our wish is to refrain from anything resembling the violence with which the antivivisectionists preach their beliefs. Yet it is difficult to refrain from impatience when we read in one of their official publications this summary of the life-work of one of the greatest benefactors of the human race:

"'Pasteur and his followers increased a very rare disease called rabies and are making fortunes out of the antirabic virus.'

"Read that and then remember that before Pasteur's day the mortality rate in the maternity hospitals of Europe of puerperal fever was 40 per cent. Remember that it was Pasteur who reduced that rate to the present one of 0.02. And then remember that there are women who now sneer at him who did more than any other to lighten 'the curse of Eve.'

"Condemnation of Pasteur coming from a woman's mouth is an example of such ingratitude that we say without reservation that the woman who assails his services to humanity must be motherless, childless, ignorant or bad.

"We do not for a moment question the sincerity of the young woman we have quoted nor that of her sympathizers. We share their abhorrence of anything savoring of needless cruelty. We do question the accuracy of their knowledge,

and consider them lacking utterly in sense of proportion and the true mercy that lies in sane humanitarianism.

"We deny absolutely their contention that animal experimentation has accomplished no good, unless, in truth, 'Life and Death and Motherhood be naught.'

"And to all we commend this thought of President Eliot of Harvard: 'Let me call your attention also to the fact that the humanity which would prevent human suffering is a deeper and truer humanity than the humanity which would save pain or death to animals.'"

Cook Rescue Expedition.—An effort is being made to raise the necessary sum of $35,000 or $40,000 to fit out an expedition for the relief and rescue of the well-known arctic explorer, Dr. Frederick Cook. Dr. Cook is a graduate of the College of Physicians and Surgeons of New York. He was a member of the Peary expedition in 1902, of the Belgian antarctic expedition, 1897-99, and the organizer and leader of the subarctic Alaska expeditions of 1903-06. He is well-known to the public as the author of books on arctic travel and as a contributor to the magazines on polar exploration, and has received many official honors. He started out in May, 1907, with the view of reaching the highest northern point possible during the long period of darkness, so that by the coming on of twilight he would be in the best possible position to reach and circumnavigate the north pole successfully. In the last letter received, dated March 17, 1908, he was forty miles above Cape Thomas Hubbard, Jr., the highest point of land on the north polar sea. He was well supplied and equipped and expressed himself as confident that he would succeed in reaching the north pole and returning to Etah, in Greenland, by September, 1908. His friends are satisfied that he has accomplished much valuable work and that his records will be important to the United States for all time to come. It is, however, six months since the time at which he should have been back at the base of his supplies, and it is feared that he may be in trouble. Hence it is proposed to fit out a rescue party with an equipment and provisions for a two years' stay, to consist only of such men as are willing to remain until either Dr. Cook and his records are rescued, or his fate is established. The expedition will be under the command of Mr. Dillon Wallace, who has had considerable arctic experience in the Leonidas Hubbard, Jr., Labrador expedition of 1903, and other expeditions. Mr. Wallace will land at Etah, and if no traces of Dr. Cook are found, will push northward on his intended course in search of him. Dr. Cook has a wife and two little girls now living in Brooklyn, and was, prior to his undertaking exploration work, a medical practitioner of good standing and acknowledged ability. A central committee appointed jointly by the Explorers' Club and the Arctic Club of America (of which Rear Admiral Schley is president) is responsible for the getting up of the expedition. Contributions should be sent direct to F. S. Dellenbaugh, secretary Cook Relief and Rescue Expedition, 224 West Fifty-second Street, New York City.

Cells with Basophile Granules in the Blood and Connective Tissue.—According to F. Weidenreich (*Folia haematol*, 1908, V, No. 3), those cells with basophile granules occurring in the blood and termed mast-leucocytes are not the same as the mast-cells of the tissues. The latter are also to be distinguished from the clasmatocytes of Ranvier, as well as from the wandering cells of Maximow. The mast-leucocytes of the human being are degenerating large mononuclear leucocytes. The clasmatocytes and round wandering cells are emigrating lymphocytes and motile fibroblasts, which have acquired a high phagocytic power.

Eclampsia.—J. E. Welch, in the *American Journal of Obstetrics and Diseases of Children*, states that the perplexing aspect of the subject of eclampsia is the fact that under apparently similar conditions one individual will have eclampsia while another will not. This may be explained, he says, by the side chain theory of immunity; in one instance, enough side chains are formed to neutralize the poison, while in another this capacity is exhausted and the cell is destroyed.

Medicolegal

Physical Examination, Competency of Witness and Prior Disease

The Supreme Court of Florida, Division A, says, in Atlantic Coast Line Railroad Co. vs. Dees, a personal injury case brought by the latter party, that it seems never to have construed the statute enacted in 1899, and now known as Section 3151 of the General Statutes of Florida of 1906, which provides that: "In all actions brought in the courts of this state to recover damages for personal injuries alleged to have been sustained, it shall be discretionary with the trial court, on motion of the defendant, to require the injured party, if living, either before or at the time of the trial of the cause, to submit to such physical examination of his or her person as shall be reasonably sufficient to determine physical condition at the time of trial and the nature and extent of the alleged injuries. The physical examination provided shall be made by a physician to be named by the court in the presence of one or more physicians or attendants of the injured party, if the party so desires. The compensation of the examining physician shall be fixed by the court in each particular case, and shall be in the first instance paid by the party petitioning for such examination but shall be taxed up as a part of the costs of the case subject to the final disposition of the same." The court now holds that this section makes it discretionary with the trial court to require such examination, and an order of such court denying the motion or application of the defendant for such physical examination will not be disturbed by an appellate court unless an abuse of discretion is clearly made to appear.

The court also holds that where a witness, who has been introduced on behalf of the plaintiff in an action brought to recover damages for personal injuries alleged to have been caused by the negligence of the defendant, has testified that he is a physician engaged in general practice, has resided in a certain designated town in the state for four years, and that the plaintiff has been his patient for some months past, a proper and sufficient foundation has been laid to warrant the witness being permitted to testify as to what symptoms he found when he was first called to see such patient.

When a witness is offered either as an expert or a skilled witness, it is for the trial court to determine whether or not the witness has been shown to possess the requisite qualifications and special knowledge to warrant his so testifying, and the decision of such trial court is conclusive on this point unless it appears from the transcript to have been erroneous or to have been founded on some error in law.

In an action brought by a passenger against a railroad company to recover damages for personal injuries alleged to have been caused by the negligence of the defendant, and such passenger was at the time the injuries were received suffering from some disease or illness which tends to aggravate the injuries, such previous infirmity will not excuse the carrier from damages to the full extent of all injuries caused by such negligence, and the fact that such carrier was not informed of the passenger's condition will make no difference.

Duty of Parents to Care for Adult Children Rendered Helpless by Accident or Disease.

The Court of Appeals of Kentucky says in the case of Crain vs. Mallone, that the duty and obligation of a parent to care for his offspring does not necessarily terminate when the child arrives at age or becomes an adult; nor is it limited to infants and children of tender years. An adult child may from accident or disease be as helpless and incapable of making his support as an infant, and the court sees no difference in principle between the duty imposed on the parent to support the infant and the obligation to care for the adult, who is equally, if not more, dependent on the parent. In either case the natural, as well as the legal obligation is the same, if the parent is financially able to furnish the necessary assistance. If the parent has no estate, or is indigent or otherwise unable to support his infant child, who is possessed with ample means, the chancellor when appealed

to might make an allowance out of the child's estate; and, in the case of an unfortunate adult, the court under similar circumstances would grant relief.

Declarations of Sick Persons

The Supreme Court of Alabama says in Stowers Furniture Co. vs. Brake, that it is the subject of express decision by it that declarations of a sick person, relative to the symptoms and nature of the disease or injury under which he is laboring, whether made to a physician or other person, are admissible as original evidence. Such declarations are admissible as explanatory of the present condition of the declarant, on the principle of res gestæ (that is, as being a part of the essential elements of the case), as well as on the necessity of the case.

What Constitutes Moral Turpitude Authorizing Revocation of License

The Supreme Court of Arkansas says, in Fort vs. City of Brinkley, that the statute of that state provides that: "Whenever any physician and surgeon or person engaged in the practice of medicine or surgery in this state shall be convicted of any crime and misdemeanor involving moral turpitude, in addition to the other penalty or penalties imposed on him, shall be added a revocation of his license to practice medicine and surgery."—Section 5247 of Kirby's Digest. This section makes the revocation of the license a part of the punishment for the offense, and contemplates that it shall be imposed by the court in which the case is tried.

"Moral turpitude is defined to be an act of baseness, vileness or depravity in the private and social duties which a man owes to his fellowmen or to society in general." Moral turpitude implies something immoral in itself, regardless of the fact whether it is punishable by law. The doing of the act itself, and not its prohibition by statute, fixes the moral turpitude.

It seems clearly deducible from the authorities that the words "moral turpitude" had a positive and fixed meaning at common law, and that the illegal sale of intoxicating liquors, not being an offense punishable at common law, does not come within the definition of a crime involving moral turpitude. In a statute using a word, the meaning of which is well-known, and which has a definite sense at common law, the word will be restricted to that sense.

Presumption That Ordinary Faculties Are Possessed

The Court of Appeals of Georgia holds, in Holcombe vs. State, that there is a general presumption that the ordinary human faculties are possessed by every individual (a) In the absence of proof to the contrary, the law presumes soundness both as to mental and bodily functions. (b) A person is presumed to have an ordinary capacity for hearing, in the absence of some reason shown to the contrary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

March 11

1 *Medical Treatment of Malignant Disease. G. W. Gay, Boston.
2 Early Treatment of Some Epitheliomas by Pure Radium Salts. F. H. Williams, Boston.
3 An Accurate, Rapid Method for Quantitative Determination of Chlorin in Urine. A Critical Study of the Short Methods in Vogue. H. W. Goodall, Boston.
4 *Mysticism and Medicine. J. E. Donley, Providence.

1. **Malignant Disease.**—Gay discusses the delay in diagnosis and submission to surgical treatment, and, in regard to tumors of the breast, holds that practically all occurring in women over 30 years of age should be removed, or at least examined through an incision. Malignant disease may be a local affection in its early stages, and early and thorough removal is likely to result in permanent cure, while procrastination diminishes the chances of relief. It would be well if all tumors could be removed as soon after discovery as possible; thus malignant tumors would be removed before the clinical signs of malignancy had developed. Gay deprecates, however, the custom of resorting to operative measures in cases of malignant infection, though suitable, and, when these measures are exhausted, telling the patient that the case is helpless and hopeless, that nothing further can be done and leaving the victim to her fate. These patients, more than others, require the services and attendance of a cheerful, hopeful, discreet physician, to assist them through the valley of the shadow, relieving them and friends of as much responsibility as possible, calming their anxiety, and helping them to bear the burden. Gay then discusses what can be done by the physician in inoperable or postoperative malignant disease. It has been his custom for years to give patients with inoperable malignant disease, and also after operation, compound tincture of iodin, from 2 to 5 drops, two or three times daily in water or milk, on a full stomach and with or without arsenic bromid, for long periods of time. The doses are increased daily by one drop, until the patient takes from 45 to 75 drops a day. Irritation of the stomach or throat is a contraindication. He gives instances in which life and working capacity were prolonged under this or similar treatment, quoting also the work of others. He refers to Coley's treatment with the mixed toxins and discusses psychotherapy as an aid in treatment. His argument is that the fact that the nature of the malady precludes recovery is not an adequate reason why a reputable physician should refuse to treat them along whatever lines afford the most comfort, mental and physical, so long as life endures.

4. **Mysticism and Medicine.**—Donley discusses philosophically the natural mystic and rationalistic phases of man; in some, the one phase predominating and in others the other. Each, if sincere, will live his life in his own way, and is not unlikely to misjudge the aims and misunderstand the motives of the others. In this light Donley discusses psychotherapy, to which, he says, singular ambiguity attaches, according as it is used of a religious movement or of a scientific procedure. Whether in the hands of the clergyman or the physician, mystical psychotherapy has to do with the meaning of life. It preaches that life is ultimately spiritual and attempts to inculcate attitudes of mind and of heart with such spiritual meaning. In a word, it preaches the laws of the spiritual life. This is the legitimate field of its endeavor, and to this it should be strictly limited. It has no right to encroach on the domain of scientific psychotherapy. Thus defined and limited, mystical psychotherapy is an affair of ethics and religion, the proper sphere of the clergyman.

New York Medical Journal

March 13

5 The Life and Work of Darwin. A. E. Brown, Philadelphia.
6 Penetrating Wounds of the Abdomen. F. W. McRae, Atlanta, Ga.
7 *The Urine in Diseases of Infancy. J. L. Morse and B. Crothers, Boston.
8 Greek for Physicans. C. W. Super, Athens, O.
9 *New Method for Radical Cure of Indirect Inguinal Hernia. C. F. Kivlin, Troy, N. Y.
10 A Ureterorenal Decalogue. B. Robinson, Chicago.
11 Studies in Metabolism of Certain Skin Disorders. J. C. Johnston and H. J. Schwartz, New York.
12 Successful Medical Treatment of Appendicitis. E. Palier, New York.
13 Climates for Consumptives. E. E. Elliot, Chicago.

7. **The Urine in Diseases of Infancy.**—Morse and Crothers give the results of the examination of urine of 667 babies at the Infant's Hospital and the Floating Hospital. The examination was usually made within the 48 hours after admission. Only 13 were suffering from diseases of the urinary tract not connected with other conditions. In this paper, the authors do not refer to the renal complications of diseases of the gastrointestinal tract, but discuss those of diseases of the respiratory tract, the nervous system, nutrition, and some unclassified conditions. Analysis of these cases shows that, putting aside diseases of the gastrointestinal tract, albuminuria and casts are more often found in pneumonia and meningitis than in other acute diseases in infancy. It does not corroborate the statements of Cassel and Simmonds as to the importance of otitis media in the etiology of nephritis in infancy, or those of many Italian and French authors as to the fre-

quency of renal complications in eczema. It shows that the kidneys are not, as a rule, affected in the diseases of nutrition, although in scurvy and severe anemia the urine may show the evidences of the hemorrhagic tendency characteristic of these diseases. It also shows that affections of the kidneys secondary to other diseases in infancy do not usually produce edema, and conversely that edema in infancy is usually due to some other cause than disease of the kidneys.

The study of these cases seems to justify the conclusions that the presence of albumin and casts in the urine in the acute diseases of infancy is the manifestation of an unusual degree of toxemia and is, to a slight extent, of bad prognostic import. However, many infants showing albuminuria and casts recovered and many others in whom the urine was normal did not. There was nothing about these cases to show that the renal condition had any direct influence on the fatal outcome; it was merely an index of the toxemia. So few pathologic examinations were made that no statement is justified as to the pathologic changes in the kidneys. It seems fair to assume from the changes in the urine, however, that in the vast majority of cases the pathologic condition did not go beyond an acute degenerative nephritis and that a definite parenchymatous or interstitial nephritis was very uncommon. It seems evident that febrile albuminuria and acute degenerative nephritis occur in the same conditions and at least as frequently in infancy as in childhood and adult life.

9. **Radical Cure of Hernia.**—Kivlin describes an operation for the radical cure of indirect inguinal hernia, differing from the Bassini operation in that Kivlin closes the opening of the internal ring, and does not transplant the cord; and from Coley's operation in that he closes the ring and Coley does not. Kivlin claims for his method a stronger support of the weakest point in the whole canal.

Medical Record, New York

March 13

14 *Principles and Technic of the Wassermann Reaction and its Modifications. H. Fox, New York.
15 *Non-Gastric Malignant Disease and Secretion of Gastric Juice. L. A. Levison, Toledo, O.
16 The Problem of Epilepsy. R. H. Porter, Chicago.
17 *Acute Postoperative Jaundice. C. G. Cumston, Boston.
18 *Egg Poisoning. D. J. M. Miller, Atlantic City, N. J.

14. **The Wassermann Reaction.**—Fox illustrates the principle of the fixation of the complement by an ingenious diagram, suggested by Dr. Wood MacMurtry, of a swinging pendulum. The pendulum representing the complement swings to one side and completes the bacteriolytic system, or to the other side and completes the hemolytic system. In the first case, antibody being present, the complement is fixed in the bacteriolytic system, and consequently no hemolysis occurs; but when antibody is absent, the complement attaches to the hemolytic system and hemolysis occurs. Fox describes in detail the substances used in performing the Wassermann reaction, the steps necessary to prepare them, and the technic of the operation. He discusses the sources of inaccuracy, and in four tables illustrates the result of the reaction, respectively, in 46 cases of clinically positive syphilis, 21 cases of undoubted syphilis, a small series of dermatologic cases in which syphilis could be excluded, and a series of cases in which the diagnosis was in doubt.

15. **Free Hydrochloric Acid in Malignant Disease.**—Levison concludes that free hydrochloric acid is diminished, not only in gastric carcinoma, but in local carcinoma also, in fact, in all cancers.

17. **Postoperative Jaundice.**—Cumston says that the existence of acute postoperative jaundice can not be denied merely from the fact that few cases are encountered. It is probably due to several causes. The serious form of acute postoperative jaundice is almost always due to the toxic action of the anesthetic, particularly chloroform, which attacks the hepatic cells, whose normal condition is below par, so that the surgeon should avoid interference, save in extreme emergency, when the liver gives evidence of disease. Occasionally there may be a spasm of the biliary tract produced by manipulation of the parietal peritoneum, while in other cases it is due to an emotional reflex.

18. **Egg Poisoning.**—Miller reports a case of egg poisoning in a girl of 11, and discusses the condition. He thinks the conclusion is warranted that the majority of instances of egg poisoning are really cases of so-called ptomain poisoning; i. e., that they are due to toxic substances developed in apparently fresh eggs by the processes of digestion, or to unrecognized changes—unrecognizable, that is, to the ordinary senses—in the eggs themselves. He suggests that as the symptoms of ptomain poisoning are in many cases strikingly similar to those produced by muscarin (the active principle of the poisonous mushroom), to which atropin is a perfectly physiologic antidote, the latter drug may be found useful in severe forms of egg poisoning.

Lancet-Clinic, Cincinnati

March 13

19 *Nervous Children. I. A. Abt, Chicago.
20 *Differentiation of Oft-Recurring Gastric From Gallstone and Other Visceral Pain and Distress. N. Rosewater, Cleveland, O.
21 Vibrotherapy. F. L. Davis, Evansville, Ind.

19. **The Nervous Child.**—Abt discusses the causes of nervousness in children (of which heredity and predisposition are important factors), the acquired causes, the child's pleasures and amusements, troubles and griefs, in regard to which last he particularly condemns the habit of asking suggestive questions after an accident. He urges regularity of habits, discusses the effect of training, describes the forms of nervousness in children, and points out that it is necessary to manage not only the child, but also the parents and sometimes the grandparents.

20. Abstracted in THE JOURNAL, Nov. 21, 1908, p. 1805.

Medical Fortnightly, St. Louis

March 10

22 Touring the Lands Where Medical Science Evolved, Medieval and Renaissant. R. G. Eccles, Brooklyn.
23 Deep Alcohol Injections in Facial Neuralgia. B. L. Hale, Cherryville, Kan.

Northwestern Lancet, Minneapolis

March 1

24 *A Clinic on Insanity. D. R. Brower, Chicago.
25 Angiomata of the Face and Sinuses—Report of a Case of Angioma of the Antrum of Highmore. E. F. Reamer, Mitchell, S. D.
26 Sporadic Trichiniasis. G. D. Head, Minneapolis.
27 Clinical Demonstration of Three Cases After Perineal Prostatectomy. H. Bouman, Minneapolis.
28 Hydronephrosis in a Child 18 Months Old. M. K. Knauff, Two Harbors, Minn.
29 Cardiospasm. O. R. Bryant, Minneapolis.

24. **Insanity.**—Brower insists on the extreme difficulty of giving a definition of insanity that can not be severely criticized, but a definition, even if it can be criticized, is an advantage. He suggests that "insanity is a more or less permanent disease or derangement of the brain, producing disordered action of the mind in such a way as to put the subject in a condition varying from his normal self and out of relation with his environment." He refers to pathologic specimens of kidney, liver, spleen and heart from the insane, illustrating the fact that insanity is a disease of the brain in a certain number of cases brought about by disease of the various organs of the body that are concerned in blood making, blood purification and blood distribution. The brain receives more blood than any organ of the body not concerned in the business of blood making, and the quality of it is of the utmost importance. He refers to the great increase in the number of cases of insanity in the present day, and says that a perfect classification of insanity has not yet been made, because no classification can be perfect unless it is based on pathology. He divides insanities, however, into first, those that are acquired—that is, the insanities that occur in brains that are normal in structure and that have been functionating properly; second, the cases that are due to a degenerative process in the brain—brains that were never quite built up on the standard lines; we call these degenerative psychoses; third, another class, in which he places the insanities of the critical periods of life, developmental and involuntary; fourth, a class in which belong the borderline cases, the obsessions and the phobias, the impulses and the sexual perversions; and, finally, a fifth class, the terminal dementias, a condition toward which all the others are traveling. He then

discusses cases of melancholia, mania, confusional insanity and paretic dementia. Cases of paresis are becoming much more frequent, the factors producing them being syphilis, alcohol and stress; the type, however, is changing. In Brower's earlier experience with general paralysis the cases were all of the grand delusion type, but now some are melancholic, others being of the simple dementia type. Further, he thinks that some of these patients improve, and once in a long while cases seem to reach a symptomatic cure through a long space of time. As to its causation, he refers to his investigations in the Hawaiian Islands, in Cairo and at Tokio some years ago, when he was unable to find a single case of the disease, and at present, though syphilis is now more generally prevalent in those countries than in America, the disease is still practically unknown, so that there must be some other factor added to syphilis in its production, and this factor he believes to be alcohol. Early recognition of general paresis with vigorous antisyphilitic treatment, tonics of the phosphorus class, and complete rest, will sometimes produce improvement.

Journal of Medical Research, Boston

February

30 Effect of Dilution on the Flocculation of Colloids. B. H. Buxton and A. H. Rahe, New York.
31 *Enterokinase in Infancy. A. E. Austin, Boston.
32 *Physiology and Chemistry of the Parathyroid Gland. W. N. Berkeley and S. P. Beebe, New York.
33 *A Transmissible Cancer of the Rat Considered from the Standpoint of Immunity. F. P. Gay.

31. **Enterokinase in Infants.**—Austin finds that kinase, like that present in the natural intestinal secretion, can be isolated from the intestines of some, but not all, infants, from 24 days of age on.

32. **The Parathyroid Gland.**—Berkeley and Beebe say that the nucleoproteid of the parathyroid relieves the symptoms of acute tetany in dogs, but the globulin has no such power. Boiling or heating the nucleoproteid solution to 80 C. for half an hour destroys its activity, and it deteriorates rapidly when kept in solution or frozen. The nucleoproteid relieves tetany by the mouth, but more effectively when given subcutaneously or intraperitoneally. Tetany is regarded as due to a metabolic poisoning accompanied by a large increase in the secretion of ammonia, and the authors are inclined to believe that the parathyroids are chiefly concerned in furnishing enzymes of prime importance in the intermediary metabolism of nitrogen.

33. **Transmissible Rat Cancer.**—Perhaps the most striking of Gay's results is that during the premetastatic period after tumor implantation there was evidence of active defense on the part of the animal, indicated by the presence of antibodies, and during this period reimplantation seemed still further to increase the resistance, so that the original tumor was destroyed; but when this period was passed, metastases occurred and the second tumor grafts grew. The presence of antibodies was demonstrated by means of complement fixation in mixtures of cancer extracts and the serum of rats. As stated, complement fixation was obtained during the premetastatic period, but never during the metastatic period.

American Journal of Physiology, Boston

February

34 *Acapnia and Shock:—IIa Principle Underlying the Normal Variations in the Volume of the Blood Stream, and the Deviation from this Principle in Shock. Y. Henderson, New Haven, Conn.
35 *Influence of Sodium Chlorid and Calcium Chlorid in Potassium Contraction. W. D. Zoethout, Champaign, Ill.

34. **Acapnia and Shock.**—Henderson concludes that the chief element regulating the volume of the arterial blood stream is the distensibility of the ventricle during diastole, and the volume of blood ejected by the ventricle varies with the pulse rate in such a way that the minute volume of the ventricular output is nearly constant at pulse rates above 60. Deviations from these maxima are caused by insufficient venous supply to the right heart. Failure of the circulation in shock is due primarily to abolition of venous, not arterial, tonus. Stimulation of the vagus and accelerator nerves does not induce the heart to deviate from this "uniformity of behavior." The pulse pressure, which is now generally taken as giving a measure of the heart's action, is not a reliable index of the systolic discharge.

35. **Influence of Sodium and Calcium Chlorid in the Potassium Contraction.**—Zoethout concludes as follows:

1. The amount of sodium in the muscle is sufficient to counteract the stimulating effect of a small quantity of potassium salt. The removal of this sodium by immersion in a 6 per cent. cane-sugar solution renders the muscles more irritable toward potassium.
2. The same is most likely true for the calcium.
3. Both sodium and calcium favor the relaxation of a muscle in potassium contraction.
4. Ringer solution and a 0.7 per cent. sodium-chlorid solution very speedily reduce the irritability of a muscle toward potassium. These solutions can, therefore, not be looked on as inert fluids, even though they preserve the irritability of a muscle toward electrical stimulation for a long time.

New Orleans Medical and Surgical Journal

February

36 Case of Pectoral Heart with Malformations and Partial Transposition of Its Vessel Trunks; and a Case of Fibrinous Tracheobronchopneumonia Due to the Pneumococcus. M. Couret, New Orleans.
37 Tumors of Penis and Testes, with Special Reference to Malignancy, and a Statistical Survey of Cancer in the Charity Hospital. J. Lazard, New Orleans.
38 Tumors of the Female Pelvis. L. Perilliat, New Orleans.
39 Tumors. O. L. Pothier, New Orleans.
40 Antidiphtheritic Serum Medication in Postdiphtheritic Paralysis. H. Dupuy, New Orleans.
41 Surgical Importance of the Intestinal Lesions of Typhoid. A. L. Wilson, Alexandria, La.
42 Carcinoma of Liver: Operation: No Return. J. B. Hargrove, Natchitoches, La.

California State Journal of Medicine, San Francisco

February

43 *Utilization of Social Waste Products. W. A. Briggs, Sacramento.
44 What is a Practical Examination in Anatomy? D. L. Tasker, Los Angeles.
45 Treatment of Tuberculosis with Intravenous Injections of Tuberculin and Atoxyl. M. Rothschild, San Francisco.
46 *The Itch. D. W. Montgomery, San Francisco.
47 True Intestinal Dyspepsia. N. W. Jones, Portland, Ore.
48 Treatment of Malignant Growths by High-Frequency Spark. D. Friedlander, San Francisco.
49 Suicide and Alcohol. A. W. Hoisholt, Stockton.
50 Primary Pneumococcus Peritonitis. L. S. Mace, San Francisco.
51 Early Recognition of Pulmonary Tuberculosis. G. H. Evans, San Francisco.
52 Direct Transfusion of Blood. W. I. Terry, San Francisco.
53 Treatment of Pneumonia. G. R. Carson, San Francisco.

43. **Utilization of Social Waste Products.**—Briggs points to the utilization of by-products which were formerly mostly, if not wholly, waste—e. g., coal tar and "those by-products of industry which emit noxious vapors and poison the neighborhood—as among the chief factors in modern industrial progress." By analogy he suggests that the waste products of civilization in like manner should be utilized as factors in social progress. Take, for instance, the opposing views of Koch and von Behring as to the bovine origin or otherwise of human tuberculosis, he says; the solution of this question requires experimentation on human beings and he insists that such experimentation can be made to conform to the dictates of an enlightened conscience, public as well as medical, by dedicating to science and humanity the lives of those forfeited to the law. He refers to a bill now in preparation for presentation to the legislature of California, authorizing the use of such capital convicts, as in consideration of commutation of sentence to life imprisonment shall voluntarily submit to such experimentations. He discusses the objections to the proposed bill as follows: It would not be a cruel and unusual punishment because it is not intended as a punishment at all. It would not necessarily be physically painful, and certainly not physically cruel, and, as an alternative to hanging, the convict himself would be the best judge as to whether it would be mentally cruel. Its results would often be negative, and even when otherwise would be less cruel than death on the scaffold. The commutation, postponement of sentence and pardon, as constitutional prerogatives of the governor, would not be interfered with, since the convict voluntarily petitions the governor for the privilege of experimentation. As to such a course diminishing the terrors of the law, since the discretionary power exists with the jury of imposing either life imprisonment or the death penalty in convictions for murder in the first degree, he asks in what way the ter-

rors of the law would be diminished if the governor, instead of the jury, should exercise this discretionary power. On the other hand, he asserts that such a course would tend to diminish the difficulties of the trial by jury; would open the door to further and more serious and systematic study of the criminal classes—their genesis, pathology, psychology, prevention and treatment; and would inevitably lead to valuable discoveries in physiology, pathology, bacteriology and therapeutics.

46. This article will be abstracted in the Department of Therapeutics.

Journal of the Medical Society of New Jersey, Orange

February

54 The Drink Habit and Its Treatment. C. A. Rossenwasser, Newark.
55 Acute Perforating Gastric and Duodenal Ulcer (concluded). E. Eliot, New York.
56 Differential Diagnosis of Tumors of the Breast. E. J. Ill, Newark.
57 *Acute Chorea. C. H. Scribner, Paterson.
58 Pediatric Don'ts. K. H. Goldstone, Jersey City.
59 Necessity for Schools of Instruction for Public Health Officers. J. L. Leal, Paterson.

57. This article will be abstracted in the Department of Therapeutics.

Southern Medical Journal, Nashville, Tenn.

February

60 *Question of the Necessity of a Second Operation for Removal of Appendix in Cases in Which an Appendiceal Abscess Has Been Treated by Simple Incision and Drainage. S. McGuire, Richmond, Va.
61 Tuberculosis of the Stomach, Liver, Gall Bladder, and Pancreas. L. W. Hotchkiss, New York.
62 Renal Calculi. D. N. Eisendrath, Chicago.
63 Tumors of the Bladder. A. L. Fowler, Atlanta, Ga.
64 Problem of Relapse After Apparent Cure in Treatment of Pulmonary Tuberculosis. C. L. Minor, Asheville, N. C.
65 *Conclusions Based on Observations of Five Hundred Cases of Fractured Skull. W. C. Kirchner, St. Louis.
66 Case of Ileus Caused by Unique Enterolith. C. H. Cargile, Bentonville, Ark.

60. **Second Operation for Appendicitis.**—McGuire discusses the question as to the necessity of a second operation for the removal of the appendix, in cases in which an appendicular abscess has been treated by simple incision and drainage. He publishes replies from a number of prominent surgeons to a question as to their practice in the matter, and also the reports in the case of twenty-three patients in which his own practice of not performing such an operation was followed. An analysis of the cases shows that all the patients are living and in good general health from 1 to 5 years after operation. In 2 there had been attacks of colicky pains, in 2 slight hernia, and 2 suffered with digestive disturbances. The result of his study is that while a surgeon may be justified in advising a secondary operation in all cases, as theoretically the safest plan to follow, he is not justified in persuading, urging or starving a patient until he consents to have it done. The appendix should always be removed at the first operation if the abscess is small and not adherent to the abdominal wall beneath the incision. It should be left only in neglected cases, in which the abscess is large and attached to the parietal peritoneum. When this condition exists the appendix is usually gangrenous, undergoes liquefaction, and is eliminated with the discharges. In such cases suppuration continues, as a rule, for several weeks, and before a secondary operation could safely be done the patient is homesick, weakened physically by confinement, and depleted financially by the expenses incident to his stay in the hospital. Experience seems to show that if subsequent trouble develops the infection is not usually acute, and pus, if it is formed, is walled in by old adhesions. Therefore, McGuire thinks that the surgeon does his duty if he makes it clear to the patient that owing to the complications which existed it was not found safe to remove the appendix, and tells him that while a second operation is advisable, it is not imperative unless he has tenderness over the incision, colicky pains in the bowels, or persistent digestive disturbances, in any of which instances it is distinctly necessary for him promptly to seek surgical assistance.

65. Abstracted in THE JOURNAL, Jan. 2, 1909, p. 67

Journal of Ophthalmology and Oto-Laryngology, Chicago

February

67 Trachoma. D. T. Atkinson, Dallas, Texas.
68 Two Cases of Serpiginous Ulcer Following Removal of Foreign Body from the Cornea by Factory Foremen. A. T. Wanamaker, Chicago.
69 Anatomic Relationship Between the Accessory Nasal Sinuses and the Orbit. N. H. Pierce, Chicago.
70 Use of Brometone in Chronic Affections of the Middle Ear. W. S. Stanley, Milwaukee.

Old Dominion Journal of Medicine and Surgery, Richmond

February

71 Hippocrates and His Times. I. S. Stone, Washington, D. C.
72 History, Etiology, Symptoms and Treatment of Amebic Abscess. G. B. Cook, Richmond, Va.
73 Diagnosis of Hysteria. B. R. Tucker, Richmond, Va.
74 Treatment of Toxemia of Pregnancy. D. J. Coleman, Richmond, Va.
75 Abortion, with Special Reference to Treatment. R. L. Ralford, Conley, Va.
76 Practical Points About Administration of Ether Anesthesia. F. S. Cary, El Paso, Texas.

Therapeutic Gazette, Detroit, Mich.

February

77 Treatment of Ureteral Calculus by Visceral Drainage. B. Robinson, Chicago.
78 *Tincture of Veratrum Viride (Norwood). J. S. Todd, Atlanta, Ga.
79 The Art of Right Living. R. S. Tyrrell, Toronto, Canada.
80 *Insomnia: Its Pathogenesis and Treatment. A. Gordon, Philadelphia.

78. This article will be abstracted in the Department of Therapeutics.

80. **Insomnia.**—Gordon says that whether any of the theories advanced as to sleep are accepted or not, the mechanism of sleep remains as yet problematic. The theories do not explain with certainty why cerebral anemia or hyperemia exists, why the neurones become retracted, why toxins accumulate periodically in the tissues. Sleep may be normal or pathologic. To the latter belong narcolepsy, lethargy, somnambulism, night terrors and sleeping sickness. Insomnia may be total or partial. The author considers the conditions in which insomnia occurs under the following groupings: Organic or functional disorders of the nervous system; psychoses; intoxications; infections; visceral diseases; general state of nutrition; painful, general or local conditions; incidental causes. In the treatment of insomnia, Gordon forbids under all circumstances the taking of heavy meals at night. Sweets should be avoided, as should all stimulants, including tea and coffee; tobacco should be reduced to a minimum or abandoned; at any rate, there should be no smoking in the evening. Constipation must be remedied: a hot lukewarm bath of half an hour's duration before retiring is useful and may be repeated if necessary. Wrapping the patient in a sheet wetted in tepid water for one minute, or a cold wet towel placed on the neck, placing the feet in hot water for fifteen minutes, sometimes succeeds. Cases due to extreme sorrow or persistent mental preoccupation are often rebellious. In these cases some form of psychotherapeutics may be useful. Until these various measures have failed medication should not be resorted to. Among drugs ten grains of sodium or strontium bromid every two hours may be repeated. Veronal 5 grains, with codein ¼ grain every hour for two or three doses is a good hypnotic. In insomnia from painful conditions, removal of the cause is of course the first measure. Sometimes a state of exhaustion follows, resulting in wakefulness. A tepid bath of from 15 to 30 minutes' duration is recommended. The author discusses insomnia depending on general nutrition, visceral and infectious diseases, and intoxication, also in organic nervous diseases. Insomnia and hysteria require vigorous measures. Removal of stimulants, avoidance of all excitement, hydrotherapy when a marked emotional state exists, isolation and confinement to bed are called for. Gordon also discusses insomnia occurring in the insanities.

Cleveland Medical Journal

February

81 Medical Cleveland in the Nineteenth Century. H. E. Henderson, Cleveland.
82 Recollections of the Early Days of Cleveland Medical College. J. C. Reeve, Dayton, Ohio.
83 Modern Treatment of Tuberculosis of the Spine. R. W. Lovett, Boston.

St. Paul Medical Journal

February

84 *Acute Traumatic and Chronic Synovitis of the Knee Joint. R. W. Lovett, Boston.
85 Perverted Metabolism: Its Relation to Certain Nervous and Mental Conditions. C. E. Riggs, St. Paul.
86 *Diagnosis of Joint Diseases. A. Colvin, St. Paul.
87 Treatment of Trigeminal Neuralgia with Deep Injections of Alcohol. C. R. Ball, St. Paul.

84. **Acute Traumatic and Chronic Synovitis of the Knee Joint.**—Lovett summarizes as follows a careful consideration of this subject: Chronic synovitis of the knee joint is not an entity but a symptom. In both acute and chronic synovitis, muscular atrophy and lateral mobility of the joint are most important and must be seriously reckoned with in treatment. An etiologic diagnosis is desirable in chronic synovitis, when it can be made. When adequate treatment has failed there should be no temporizing, and, except in tuberculosis, chronic degenerative disease, intermittent synovitis, and, of course, hemophilia, the knee joint should be opened.

86. **Joint Diseases.**—Colvin emphasizes the importance of the radiograph in the diagnosis of various forms of joint diseases. In regard to tuberculous joint disease, he says that the slowly, but progressively, infiltrating nature of the disease makes it less amenable to operative surgery than the ordinary pyogenic diseases of bones and joints, and although selected cases are benefited by operative interference the protective treatment is required in the large majority. The points to be decided are:

1. Is the deformity due to muscular spasm?
2. Or to muscular spasm plus a real nutritive shortening of the muscles?
3. To what extent are the capsule and fibrous structures around the joint responsible?
4. How much change of form has the bone undergone, either from destruction or from change of form due to weight bearing on a structure weakened by disease?
5. Is there actual bony union between the joint surfaces?

It may be stated broadly that when rest and extension are faithfully employed deformity due to muscular spasm alone will be overcome entirely, that due to muscular spasm plus the nutritional shortening of the muscles will be much lessened, and that due to bone and joint changes will be unchanged.

Journal of the Indiana State Medical Association, Fort Wayne

February

88 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
89 Epidemiology of Typhoid Fever. H. O. Bruggeman, Fort Wayne.
90 *Disposal of Sewage in Small Towns. G. B. Lake, Wolcottville.
91 Anesthesia Considered as a Specialty. C. N. Combs, Terre Haute.
92 Ocular Manifestations in General Diseases. W. F. Hughes, Indianapolis.

90. **Sewage Disposal in Small Towns.**—Lake describes the evolution of modern methods of sewage disposal and enumerates the seven methods in use to-day, namely, dilution (or emptying into some large body of water), sewage farming, chemical precipitation, intermittent sand filtration, the septic tank, the contact process (bacterial action), and the continuous trickling process. To these he adds that of cremation, which, when the fluid elements are otherwise disposed of, is the best sanitary arrangement possible. The disposal of excrement by cremation requires special apparatus, which can be obtained for about $40. The incinerator can be set up in any room in which there is a chimney connection and is operated as easily as a stove. He then describes the dilution, sewage farming, septic tank, and contact filter processes as applicable in small communities.

New York State Journal of Medicine, New York

February

93 *The Physician and Law Making. A. G. Root, New York.
94 Pneumonia in the Aged. H. L. Elsner, Syracuse.
95 Acute Toxic Insanity Due to Drugs. M. Gage-Day, Kingston.
96 Rabies in New York State. V. A. Moore, Ithaca.
97 Stricture of the Membranous Urethra. E. L. Keyes.

93. Abstracted in THE JOURNAL, Feb. 6, 1909, p. 495.

Journal of the Kansas Medical Society, Kansas

February

98 Work of the State Board of Health. S. J. Crumbine, Topeka.
99 Renal Calculus. D. W. Basham, Wichita.

Laryngoscope, St. Louis

February

100 Multiple Papilloma of the Larynx in Children. H. Smith, New York.
101 Limitation of Otolaryngologic Practice. J. C. Beck, Chicago.
102 Aural Surgery. D. M. Campbell, Detroit, Mich.
103 Artificial Illuminants in Laryngoscopy. A. C. Morrison, Chicago.
104 After-Treatment of Tonsil Wounds. E. Pynchon, Chicago.
105 *Mechanical Factors in Cold-Taking and Their Therapuetic Interpretation. D. C. Hilton, Lincoln, Neb.
106 New Method of Posterior Nasal Tamponade. J. Wolff, New York.

105. Published in the *Medical Herald*, February, 1909, and abstracted in THE JOURNAL, March 20, 1909, p. 995.

Kentucky Medical Journal, Bowling Green

February

107 *Four Cases of Cesarean Section. A. H. Barkley, Lexington.
108 *The Schäfer or Prone Pressure Method of Artificial Respiration. J. B. Lukins, Louisville.
109 Acute Bronchitis. S. J. Fryer, Lebanon.
110 Bronchopneumonia. S. H. Ridgway, Shepherdsville.
111 Pleurisy. S. B. Crume, Bloomfield.
112 Lobar Pneumonia. C. Z. Aud, Cecilian.
113 Surgical Treatment of Injuries of the Chest. R. C. McChord, Lebanon.
114 Vesical Irritation of Symptomatic Cystitis. L. Frank, Louisville.
115 Value of Blood Examinations and of the Serum and Vaccine Therapy Resulting Therefrom. F. H. Montgomery, Danville.
116 Gastroenteric Troubles in Children. G. G. Thornton, Lebanon.
117 *Uterine Displacements. I. Abell, Louisville.
118 Infectious Agents and Their Sources. T. H. McCarley, Simmons.
119 Roentgen Rays in Treatment of Tuberculous Cervical Glands. J. J. Rodman, Owensboro.
120 Treatment of Cerebrospinal Meningitis. M. P. Creel, Central City.
121 Incontinence of Urine in Children. J. S. Gunn, Schochoh.
122 Measles. J. F. Rodgers, Bowling Green.
123 Malarial Fever. C. L. Venable, Adairville.
124 Anterior Poliomyelitis. B. S. Rutherford, Bowling Green.
125 Why We Are Not Better Doctors? H. M. Meredith, Scottsville.
126 Is Medicine an Ethical Profession? P. C. Sutphin, Canmer.
127 Cases I Have Lost. J. B. Scholl, Jabez.
128 Medical Ethics. J. G. Renaker, Dry Ridge.

107. Abstracted in THE JOURNAL, Oct. 17, 1908, p. 1353.

108. **Artificial Respiration.**—Lukins urges the advantages of the prone pressure method of artificial respiration as described in THE JOURNAL, Sept. 5, 1908, p. 801, by Prof. A. E. Schäfer of Edinburgh.

117. **Uterine Displacements.**—Abell summarizes his paper as follows:

1. In simple uncomplicated cases of anterior displacements pregnancy almost invariably effects a cure. As such patients are usually sterile, the problem is the induction of pregnancy. This can generally be accomplished by thorough dilatation; if the patient is unmarried the wearing of a stem pessary between periods will relieve her of pain and discomfort.

2. In simple retrodisplacements pregnancy usually produces a cure; the retention of the uterus in its normal position by means of a pessary will often permit of the occurrence of pregnancy. In the event that it does not do so, and in all cases of unmarried women, suspension of the uterus by means of the Gilliam operation is to be advised.

3. Displacements complicated by inflammatory lesions are never to be treated with a pessary, and no attempt should be made to replace such uteri under an anesthetic; if no adhesions are present, rest, with local pelvic depletion, may so reduce the inflammation that reposition of the uterus and temporary retention with pessary will be permissible. In all other instances the adhesions are to be broken up only after the abdomen has been opened and with the removal of the diseased part, followed by suspension of fixation of the uterus, the latter depending on the age of the patient.

4. Displacements associated with relaxation or injury to the pelvic outlet are never to be treated by pessaries and are only amenable to surgical treatment. Complete relief can be obtained only by bearing in mind the extent of the pathology and correcting the prolapse, not only of the uterus, but of the associated viscera. The sterility which is one of the symptoms of pelvic displacements can be overcome, as a rule, by replacement and retention of the uterus in its normal position and securing a healthy endometrium, usually by means of a curetting.

6. Pessaries are to be used in the treatment of uterine displacements, not with the idea of producing a cure, but of affording a temporary relief.

7. Displacements of the uterus associated with a general abdominal ptosis should not be subjected to operation, and but little is to be expected from local treatment. A good binder, rest, and general tonics give the best results.

Archives of Internal Medicine, Chicago

February

129 *Metabolism in Diabetes. G. Lusk, New York.
130 *Anatomic Explanation of the Greater Amount of Vocal Fremitus and Vocal Resonance Normally Found at the Apex of the Right Lung. G. Fetterolf, Philadelphia.
131 *Multiple Neurofibromatosis (von Recklinghausen's Disease). F. Harbitz, Christiania, Norway.
132 Relation of Iodin to the Structure of the Thyroid Gland in the Sheep, Dog, Hog, and Ox. D. Marine and C. H. Lenhart, Cleveland, O.

133 *Experimental Myocarditis. M. S. Fleisher and L. Loeb, Philadelphia.
134 *A Possible Means of Differentiation Between Cardiac Dilatation and Pericarditis with Effusion. W. J. Calvert, Columbia, Mo.

129. **Metabolism in Diabetes.**—Lusk's principal points are: Diabetes mellitus is a condition in which the power to burn sugar within the organism is partly or completely destroyed. It is to be distinguished from various forms of glycosuria in which the appearance of sugar in the urine is due to a weakened power of the organism to retain it as glycogen. When the power to burn glucose is completely lost, the organism must exist at the expense of protein and fat. Fat is completely burned under normal circumstances and forms no sugar. Protein, however, yields 45, and in some cases 60 per cent. of sugar, which is lost. The excess of heat formed in protein metabolism and the sugar lost in the urine leave only 19 per cent. of possible energy of the protein available for the organism. Beta-oxybutyric acid results from fat metabolism, and its appearance in the urine, it is suggested, is due to the failure of a special ferment to destroy it. It may also be produced by the oxidation of aminoacids derived from the proteins. Aminoacids which form sugar on ingestion do not form beta-oxybutyric acid. This explains why acidosis in fasting is reduced on ingestion of meat. Alcohol, by reducing the metabolism of fat, diminishes the formation of oxybutyric acid, but it also may reduce the tolerance of the diabetic for carbohydrates. Galactose, levulose and pentoses are of little value in diabetes. The perverted metabolism in diabetes results, therefore, in a condition in which sugar can not burn and is lost, and a large share of protein is lost by conversion into sugar, and finally the power to burn fat further than the stage of beta-oxybutyric acid may be lost. The administration of carbohydrates beyond the power of the system to burn them is injurious. Alkalies assist the elimination of beta-oxybutyric acid, which is beneficial because the diabetic does not die in consequence of the amount of acid in the urine, but from that retained in the body. The tolerance for carbohydrates must be determined. Mandel and Lusk regard a D: N ratio of 3.65 to 1 as fatal, although it may not continue through life. Fasting days are very desirable. Butter should be avoided. Apparently a high acidosis lowers the tolerance for carbohydrates. There is no cure for diabetes. Only dieting relieves the sufferer. Extracts of pancreas and the ferments of yeast are without effect and serum treatment is useless.

130. **Vocal Fremitus and Vocal Resonance.**—Fetterolf considers unsatisfactory the usual explanations of the fact that vocal fremitus and vocal resonance are more marked at the right apex than at the left. His explanation rests on the fact that sound vibrations are transmitted not only by the column of air, but also by the walls of the larynx, trachea and bronchi. On the right side the trachea lies almost in contact with lung, almost entirely throughout its thoracic course. On the left it is separated from the lung by 3 cm. or more of blood vessels and other tissues. To this inequality Fetterolf attributes the difference in vocal resonance and vocal fremitus.

131. **Multiple Neurofibromatosis.**—Harbitz reports 15 cases of von Recklinghausen's disease, which is characterized by multiple cutaneous tumors, pigment anomalies, tumors of nerves in their various forms and elephantiasis-like formations. As symptoms of secondary order, psychic disturbances, developmental defects, vasomotor disturbances and menstrual anomalies may occur. On account of its frequent hereditary basis, multiplicity of tumors, occasional congenital incidence, and frequent association with other congenital defects, the disease is to be regarded as a malformation of the nervous system affecting chiefly its connective tissue structure. The tumors are often late and slow in development and may merge very slowly into malignant growths.

133. **Experimental Myocarditis.**—Fleisher and Loeb show that myocarditis similar to that observed in hearts showing hypertrophy can be produced in rabbits by the injection of spartein sulphate or caffein sodium benzoate, together with a small amount of adrenalin, but not by the same drugs in the absence of adrenalin. Excessive strain of the heart muscles appears to be a factor in producing the lesion and such hearts show functional inferiority. The method may prove useful in determining the correlation between the activity of the heart and the function of certain other organs under pathologic conditions.

134. **Differentiation of Cardiac Dilatation from Pericarditis with Effusion.**—According to Calvert, in both conditions the right lobe of the liver is depressed, but in dilatation, owing to displacement of the bony thorax, an apparently normal or elevated position of the liver may be found. Hence, in cardiac dilatation high liver dulness is present; in pericarditis with effusion low liver dulness; and in each a narrow band of relative lung-liver dulness.

Pennsylvania Medical Journal, Athens

February

135 *The Surgery of the Cervical Triangles. C. H. Frazier, Philadelphia.
136 Medical Words Commonly Mispronounced. F. A. Rhodes, Pittsburg.
137 Economic Loss to Pennsylvania in 1906 from Deaths by Preventable Diseases. S. Egbert, Philadelphia.
138 *Treatment of the Nose in Children. D. J. Langton, Shenandoah.
139 *Trachoma and the Public Weal. C. P. Franklin, Philadelphia.
140 Trachoma. A Social Disease. E. Stieren, Pittsburg.
141 Fractures and Their Legal Status. J. F. Davis, Oil City.

135. Abstracted in THE JOURNAL, Oct. 31, 1908, p. 1543.

138. Abstracted in THE JOURNAL, Oct. 24, 1908, p. 1455.

139. Abstracted in THE JOURNAL, Oct. 17, 1908, p. 1357.

Journal South Carolina Medical Association, Greenville

February

142 *The Action of Certain Diuretics, with Special Reference to Their Utility in Treatment of Nephritis. G. E. Thompson, Inman.
143 Diseases of the Gall Bladder and Operations for Gallstone. E. C. Black, Greenville.
144 Uses and Abuses of Atropin in Treatment of Commoner Eye Diseases. L. R. H. Gantt, Spartanburg.

142. **Diuretics in Nephritis.**—Thompson says that the administration of the toxic diuretics should be guarded to prevent their cumulative effect. There seems to be no theoretical indication for the vasoconstrictors in nephritis, save when lowered tension is present. On the other hand, there is danger of too much irritation of the secreting cells as a result of the cell stimulant class. Certain diuretics owe at least a part of their efficiency to their action in improving the quality of the blood.

Annals of Otology, Rhinology and Laryngology, St. Louis

December

145 *Importance of Upper Respiratory Tract in Etiology of Cryptogenetic Infections, Especially in Relation to Pleuritis. G. B. Wood, Philadelphia.
146 Morphology of the Turbinals. J. M. Ingersell, Cleveland, O.
147 Giant Tumors of the Larynx. F. Massei, Naples, Italy.
148 Operative Treatment of Malignant Tumors of the Nose. A. Denker, Erlangen, Bavaria.
149 Cysts, Abscesses, and Edema of the Epiglottis. H. L. Swain, New Haven, Conn.
150 Interesting Cases of Diseases of the Alveolar Process. W. H. Haskin, New York.
151 Submucous Resection in Ozena. Prof. Mermod, Lausanne, Switzerland.
152 Treatment of Tuberculosis of the Upper Air Passages. T. Heryng, Warsaw, Poland.
153 Influence of Adrenalin in Causation of Arteriosclerosis. F. E. Hopkins, Springfield, Mass.

145. **Cryptogenetic Infections in Pleuritis.**—Wood says that an infecting focus of the upper respiratory tract, and this is most frequently found in the tonsils, may give rise to a pure toxemia or even to a bacteriemia. Toxemia is a very frequent condition, and because of its frequency is the most important form of infection coming from the tonsils. Bacteriemia originating from the throat is comparatively rare, though a large number of cases have been reported. In either condition, if the pleura is a point of least resistance, as it is in a large majority of phthisical patients, it may easily be more or less affected by the poison circulating in the blood. The faucial tonsils may present unrecognizable foci of infection, causing in many individuals a mild toxemia, which toxemia, however, is of importance only when the resistance of the individual is below normal. In exceptional cases there may exist lymphatic anastomosis between the deep cervical lymph-nodes and the supraclavicular glands. It is probable that the supraclavicu-

lar glands receive afferent lymph vessels which drain the parietal apical pleura. Occasionally the efferent of the supraclavicular gland empties into a node situated in the notch formed by the junction of the subclavian and internal jugular veins. This node may also receive the efferent lymph vessels of the deep cervical lymph nodes, and is only separated from the pleural apices by the internal carotid artery and its sheath. It is conceivable that lesions of this gland might cause a retrograde current which would carry the infection to the supraclavicular nodes, or a periadenitis of this node might possibly involve the pleura directly through continuity of structure. The necessary links in this infection, however, are so numerous and independent, one of the other, that only in very rare cases would it happen that they would all be present so as to form a direct path from the throat to the pleural apex.

Memphis Medical Monthly

February

154 *Delivery of Triplets. Probable Secondary Impregnation. J. W. Cunningham, Memphis, Tenn.
155 Cryptorchism. B. Malone, Memphis, Tenn.
156 Responsibility of Early Diagnosis in Tuberculosis. J. W. Laws, Lincoln, Neb.
157 Nasal Respiration. P. M. Farrington, Memphis, Tenn.
158 Drug Addiction and Its Treatment. W. S. Robinson, Nashville, Ark.
159 Eyes and Ears of School Children. A. C. Lewis, Memphis, Tenn.

154. **Secondary Impregnation.**—Cunningham reports a case which he believes to be an instance of secondary conception. He was engaged in June, 1908, to attend a primipara at her approaching confinement. He was not called until September 12, when she was said to be in labor. As the cervix was high, hard and not dilated, he went away and found her next day attending to her usual duties. On November 1, he was summoned again, when a first child, normal, weighing about nine pounds, was born; it had apparently been dead for some time, as it was macerated. Twenty-five minutes later a second child was born alive and weighed about four pounds, and yet six minutes later a third child, also alive, was born. Both were well formed, lived and did well. Both the last two children were born in the amniotic sacs inside all the membranes. There were two placentas, one for the first child, which, like the fetus, was macerated and degenerated, with a blackened cord, and one for the twins, the cords from each child meeting in the center of the placenta. The woman's last menstrual period occurred on Dec. 20, 1907, and Cunningham was called to attend her on Sept. 12, 1908, which would have been about the right time for the first child to have been born. She had one other menstrual period about Feb. 18, 1908, which would bring the birth of the twins on November 1, also to a normal gestation. Cunningham concludes, therefore, that this was a case of double conception.

Detroit Medical Journal

February

160 The Antivenereal Campaign: Its Propaganda, Present Status, Future Possibilities. A. Williams, Grand Rapids, Mich.

Ophthalmic Record, Chicago

February

161 *New Operative Procedure in Treatment of Trachoma. D. H. Coover, Denver.
162 Cyst of the Iris. J. S. Wever, Kansas City, Mo.
163 Episcleritis Periodica Fugax—With Report of Case. J. S. Wyler, Cincinnati.
164 Mucous Patch on the Conjunctiva with Demonstration of the Spirochete Pallida. H. McKee, Montreal.
165 Another Dressing for Operated Eyes. S. Mitchell, Hornell, N. Y.

161. **Trachoma.**—Coover uses the following method under general anesthesia: No. 0 or 00 sand paper is cut into strips about three or four inches in length by three-quarters inch in width, and sterilized by dipping into alcohol and burning it off. The conjunctival sacs are thoroughly cleansed, and the upper eyelid is grasped along its margin by Darier's forceps, and, the edge being turned on itself, the lid is everted until the retrotarsal fold is brought into view. A horn spatula should be inserted beneath the lid to protect the cornea. The strip of sand paper is next rolled lengthwise over the index finger, and, holding it firmly between finger and thumb, the entire lid surface is thoroughly and briskly rubbed. By folding or rolling the strip of paper in different ways all the recesses can be reached and the entire surface rubbed down smooth. The surface of the lids and entire conjunctival sac are thoroughly flushed with sterilized water or normal salt solution. The author has never observed any particles come away, nor has any foreign body ever been discovered in the eye after operation. A dressing of cotton or gauze soaked in sterilized water or normal salt solution is applied. Cold applications are used for the next 5 or 6 hours. The reaction is slight, the patient returning the next day with eyes open. As long as there is any secretion, a solution of silver nitrate, two grains to the ounce, is applied once in 24 hours to the everted lids. Coover claims for this operation:

1. It is applicable in all forms of trachoma—the granular, papillary and mixed. Even in the old cicatricial forms it acts well, smoothing down the rough and hypertrophied portions of the conjunctiva.
2. There is very little reaction, the author having operated in thirty-five cases to date, and in none of them has there been a severe irritation or a single corneal complication following.
3. By this method of *grattage* the smaller granulations in process of development, as well as the large, are removed, and the after-treatment with caustic applications is not necessary.

Western Medical Review, Omaha, Neb.

February

166 *Fractures of the Elbow Joint. D. J. Reid, Holbrook, Neb.
167 Fractures of Neck of Femur. C. A. Hull, Omaha, Neb.
168 Open Treatment of Fractures. A. C. Stokes, Omaha, Neb.
169 *Borderline Cases in Medicine and Surgery. C. C. Allison, Omaha, Neb.

166. Abstracted in THE JOURNAL, July 4, 1908, p. 68.

169. Published in the *American Journal of Surgery*, February.

Journal of Tennessee State Medical Association, Nashville

February

170 Chronic Alcoholism. J. W. Stevens, Nashville.
171 *Effect of Menstruation on Certain Skin Diseases. J. M. King, Nashville.
172 Amebiasis: Its Symptomatology, Diagnosis, and Sequelæ, and the Use of Formalin and Copper Phenol Sulphonate in Treatment. J. L. Jelks, Memphis.
173 Epidemic Cerebrospinal Meningitis—Its Prompt Recognition and Treatment by Antimeningitis Serum. J. Overton, Nashville.

171. **Menstruation and Skin Diseases.**—King reviews the relations of menstruation to acne, acne rosacea, eczema, herpes, pemphigus, dermatitis herpetiformis, urticaria, edema and erythema, erysipelas, ecchymoses and purpura, pruritus, psoriasis and seborrheal dermatitis, hyperidrosis, bromidrosis, chloasma, lupus and syphilis. He attributes the disturbances to nervous origin associated with the function itself. These first steps of nervous disturbance would in all probability lead to the failure of normal metabolism and excretion, thus causing the blood fluids and lymph to become overcharged with waste and toxic products. Such a condition is manifested by increase in weight, increase in blood pressure, rise in temperature and the nervous phenomena associated, as a rule, with this period. This condition would explain to some extent the aggravation seen in many of these skin diseases.

Journal Biological Chemistry, Baltimore

February

174 *Synthesis of Protamin Through Ferment Action. A. E. Taylor, Berkeley, Cal.
175 *Composition and Derivation of Protamin. A. E. Taylor, Berkeley, Cal.
176 Question of Identity of Pepsin and Chymosin. A. E. Taylor, Berkeley, Cal.
177 Inversion of Cane Sugar and Maltose by Ferments. A. L. Taylor, Berkeley, Cal.
178 Oxidation of Glutamic and Aspartic Acids by Means of Hydrogen Peroxid. H. D. Dakin, New York.
179 Action of Glycocoll as a Detoxicating Agent. H. D. Dakin, New York.
180 **Bacillus Infantilis* (n. s.) and Its Relation to Infantilism. A. I. Kendall, New York.
181 *Products of *Bacillus Infantilis* Grown in Artificial Media. C. A. Herter and A. I. Kendall, New York.
182 Comparison of Methods of Reid and Schenck for Quantitative Estimation of the Reducing Substances in the Blood. J. J. R. MacLeod, Cleveland, O.
183 Relationship Between Ionic Potentials of Salts and Their Power of Inhibiting Lipolysis. R. H. Nicholl, Chicago.
184 Reducing Component of Yeast Nucleic Acid. W. F. Boos, Boston.
185 Comparative Tests of Spiro's and Folin's Methods for Determination of Ammonia and Urea. P. E. Howe and P. B. Hawk, Champaign, Ill.
186 Reagent for Detection of Reducing Sugars. S. R. Benedict, New Haven, Conn.

187 Occurrence of Skatol and Indol in Wood of *Celtis Reticulosa* (Mequel). C. A. Herter, New York.
188 *Synthesis of Paranuclein Through Agency of Pepsin, and the Chemical Mechanics of the Hydrolysis and Synthesis of Proteins Through the Agency of Enzymes. T. B. Robertson, Berkeley, Cal.

174 and 175. **Synthesis, Composition and Derivation of Protamin.**—This subject is also discussed editorially in this issue. The protamin which was used by Taylor is derived from the sperm of the salmon and is also called salmin. Taylor finds in agreement with Kossel that this substance is composed of four aminoacids: Arginin, amino-valeric acid, serin and prolin. By prolonged digestion of a mixture of these four aminoacids with an enzyme derived from the liver of the clam, Taylor was able to regenerate a substance having the composition of the original protamin. Kossel has suggested that protamin is derived from histone which he regards as being built up from aminoacids, produced by the disintegration of the protein of muscle since the testicle is in part formed during a period in which the salmon are fasting and their muscles wasting. Taylor modifies this hypothesis by supposing that the histone is formed in the testicle from the protein of the blood which breaks down into its constituent aminoacids and that the proteins of the blood are derived from the muscle.

180 and 181. **Bacillus Infantilis.**—Kendall describes a new bacillus found in the cases of infantilism investigated by Herter. It is a spore-forming organism and has been found in limited numbers in the feces of some but not all normal infants. It is a saprophytic organism which under certain undetermined conditions finds a suitable environment in the intestinal tract and proliferates there. It produces no agglutinins and there is no direct evidence of its etiologic relationship to infantilism. Animal experiments indicate that the diarrhea observed in cases of infantilism may be caused by irritant metabolic products, resulting from the proliferation of *B. infantilis* in the intestinal tract. According to Herter and Kendall, this organism produces a considerable quantity of volatile bases, consisting chiefly of ammonia, but containing also other amins, including probably methylamin and ethylamin and possibly diamins, such as putrescin and cadaverin. None of the ordinary products of putrefaction, viz., indol, skatol, phenol, aromatic oxyacids, hydrogen sulphid or mercaptans was discoverable.

188. **Synthesis of Paranuclein.**—Taylor assumes (*supra*) in his work on the synthesis of protamin that the enzyme acts simply as a catalyzing agent and is itself unaffected by the reaction of hydrolysis (see editorial in this issue of THE JOURNAL). If this were the case, the equilibrium between the decomposition of protein into its constituent aminoacids and its reconstruction from the aminoacids produced would occur when the velocity of these two reactions became equal and would depend on the relative concentration of the protein and the products of its own decomposition, independently of the strength of enzyme present. Robertson shows, however, that the velocity of hydrolysis diminishes with increasing substrate concentration, i. e., with increasing strength of the protein solution. He has succeeded in synthesizing paranuclein by the action of pepsin on the concentrated solution of the products of digestion of sodium or potassium caseinate. The velocity of this synthesis does not vary directly as the concentration of the pepsin, but falls off abruptly as the concentration of the pepsin falls below a certain value. When equilibrium has been reached in the hydrolysis of such a solution of casein, the addition of a large amount of solid pepsin to the unconcentrated products of the reaction will cause the reaction to be reversed with the regeneration of paranuclein. The equilibrium is evidently shifted by the introduction into the mixture of excess of pepsin. Heating a solution containing a high concentration of pepsin and a low concentration of the products of hydrolysis of casein to a temperature of 65 C. (10° to 15° above the "thermal death-point" of pepsin) brings about a rapid synthesis of paranuclein. From the results of these experiments, Robertson concludes that the active agent in reversion is not identical with the active agent in hydrolysis, but that the pepsin undergoes some modification in the process and does not act as a simple catalytic agent.

Robertson suggests the following theory of ferment action to explain these phenomena. He regards the process of hydrolysis as consisting of a series of reactions in which hydrous pepsin first unites with the protein molecule with the elimination of water. The new compound takes up a molecule of water and splits into two simpler molecules with the separation of anhydrous pepsin. The anhydrous pepsin unites again with water and the process is repeated until the maximum amount of protein is broken down. In the reaction of synthesis it is supposed that an anhydrous pepsin takes the elements of water from the simpler molecules which unite to regenerate the protein and the pepsin gives up water to the medium; thus the hydrous enzyme accelerates hydrolytic decomposition, while the anhydrous enzyme acclerates synthesis by the removal of water. It is assumed that much of the pepsin is changed in the course of hydrolysis from the hydrated to the anhydrous form until an equilibrium occurs between the action accelerating hydrolysis and that accelerating synthesis. It is suggested that the relation between the anhydrous and the hydrated forms of enzyme may be similar to that between the "internal salt" and the hydrated forms of aminoacid.

Military Surgeon, Richmond, Va.

February

189 The Card System as Adapted to Property Accounts. C. C. Foster, Boston, Mass.
190 Plea for the Early Diagnosis of Pulmonary Tuberculosis. B. L. Wright, U. S. Navy.
191 *Sanatorium Management—The Daily Routine at Fort Stanton. P. M. Carrington, Fort Stanton, N. M.
192 *The Steel Frame in the Transportation of the Disabled. C. C. deMooy, Netherlands Military Medical Service.
193 Study of Military Hygiene for the National Guard Officer. R. Smart, Albuquerque, N. M.
194 Field Hospitals of the Austrian Red Cross. Stabsarzt Dr. J. Steiner, Imperial and Royal War Ministry.
195 Work of the Army Board on Tropical Diseases as They Exist in the Philippine Islands. J. M. Phalen and H. J. Nichols, U. S. Army.

191. An article of somewhat similar character by the same author appeared in the *New York Medical Journal*, Feb. 27, 1909, and was abstracted in THE JOURNAL, March 13, 1909, p. 921.

192. **Transportation of the Disabled.**—deMooy describes and figures a steel frame for the transportation of the disabled, for which he claims the following advantages: It prevents unnecessary handling; allows the most comfortable position; there is no risk of the patient falling out of the stretcher should the bearer fall, stumble or be wounded; it is possible to carry the patient up or down very steep places, and it can be transported on any kind of vehicle.

American Journal of Orthopedic Surgery, Philadelphia

February

196 *Etiology of Lateral Curvature. P. W. Nathan, New York.
197 Suggestions for Treatment of Lateral Curvature by Braces. H. O. Feiss, Cleveland.
198 Acetone: Its Occurrence in Orthopedic and Surgical Cases. J. W. Sever, Boston.
199 *Ankylosis of the Knee. E. M. Little, London, Eng.
200 *When is Bony Union Complete After Excision of Knee Joint? J. T. Rugh, Philadelphia.
201 *Non-Operative Treatment of Fracture of Femoral Neck. A. M. Forbes, Montreal.
202 *Operative Treatment for Intracapsular Fracture of Neck of the Femur. G. G. Davis, Philadelphia.
203 *Drop Phalangette. W. G. Stern, Cleveland, O.
204 *Plastic Operations to Elongate Cicatricial Contractions Across Joints. S. L. McCurdy, Pittsburg.
205 Treatment of Deformity Following Colles' Fracture. S. L. McCurdy, Pittsburg.

196, 202, 203, 204. Abstracted in THE JOURNAL, Aug. 8, 1908, p. 526.

199, 200. Abstracted in THE JOURNAL, Aug. 1, 1908, p. 430.

201. Abstracted in THE JOURNAL, July 25, 1908, p. 343.

Southern California Practitioner, Los Angeles

February

206 Honesty in Medicine and Surgery. R. P. McReynolds, Los Angeles, Cal.
207 Ethics of Consultation. J. T. Fisher, Los Angeles.
208 Is the Medical Profession in Los Angeles Handicapped? C. E. Zerfing, Los Angeles.
209 Tuberculosis and Pregnancy. A. D. Bechtel, Prescott, Ariz.
210 Maxims for Tuberculous Patients. G. H. Kress, Los Angeles.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 27

1 *Chronic Spinal Meningitis. Sir V. Horsley.
2 *Physiology of the Female Genital Organs. General Calcium Metabolism. W. B. Bell and P. Hick.
3 *Sleep and Want of Sleep. R. Farquharson.
4 *Pathology of Syphilis of the Nervous System in the Light of Modern Research. F. W. Mott.
5 Case of Acute Ascending Paralysis. H. J. Dean.
6 Arterial Blood-Pressure Records Before and After Muscular Exertion. O. K. Williamson.
7 Treatment of Chronic Gonorrhea by Antigonococcus Vaccine. A. Loxton.

1. **Chronic Spinal Meningitis.**—Horsley discusses certain cases of chronic spinal meningitis, the causation of which has yet to be finally determined. They yield to surgical treatment when ordinary medicinal treatment has failed. These cases resemble tumors of the spinal cord. They are those in which an adult person—Horsley has seen only one case below the age of puberty—begins to complain of pain and progressive loss of power in the legs, with, it may be also, slight kyphotic curvature of the spine, and develops ultimately a progressive paraplegia that runs through the ordinary course and terminates fatally. Horsley has seen a relatively large number of such cases, in most of which he has performed laminectomy and subdural mercurial irrigation. All these cases had been previously diagnosed as tumor of the spinal cord or disease of the vertebral column. But there are certain features which should lead to their recognition as cases of chronic spinal meningitis and not tumor. A tumor of the spinal cord commonly exhibits the pain as localized to one nerve root, but in these cases of chronic meningitis the pains spread gradually to the front and back of the thigh and cause painful cramping and twitching of muscles of the right leg. The right toe is often involuntarily hyperextended with the pain, which involves a diffuse area supplied by several nerves, no particular nerve distribution being involved. Marked tightness and numbness of the thigh is another symptom. There is slight dribbling of micturition and severe pain in the small of the back. There is some wasting and weakening of the leg. Hyperesthesia of the leg is present, but in none of Horsley's cases was there absolute anesthesia. The paralysis begins by a gradual sense of weakness coming on in the whole leg. In some cases the patients complain of spasticity and these are doubtless diagnosed as lateral sclerosis, but in point of fact examination of the spinal cord in a severe case shows a general sclerosis throughout the cord. Secretion is proportionately paralyzed with advance of the paraplegia. The patients show no vasomotor phenomena, as a rule. Their skins look normal and there seems no tendency to trophic disturbance. As to the part of the spinal cord affected, the two cases Horsley has used as illustrations began in the region of the cauda equina, and in the majority of 21 cases the mischief apparently began all over the lower half of the back of the cord. By the time the case is referred for operation the exploration must begin in or just below the mid-dorsal region. The cases occur mostly in adults, and this has an important bearing on the causation of the mischief and the prognosis. At or below middle life recuperation is likely to be very good; later it is poor. There is, in these cases, a large collection of cerebrospinal fluid around the cord and it is under great pressure. This leads to ischemic changes. Horsley thinks that a number of these patients are not actually syphilitic, though some certainly are so and such individuals resist all treatment not directly applied by surgical intervention. A certain number also are gonorrheal. Treatment consists in simple laminectomy, opening the theca and washing it out with a mercurial lotion, even up to 1 in 500 in strength, though Horsley has used that strength only once or twice. The skin wound should be completely closed, not drained. After the wound is completely healed, free mercurial inunction of the spine should be ordered.

2. **Calcium Metabolism.**—Bell and Hick discuss the methods of investigating calcium metabolism. They have come to the conclusion that the lime salts are not only necessary for the construction of the body and its growth, but also for keeping it healthy and in repair, and for the reproduction of the species. These salts become apparently pathologic when, like inflammation, they endeavor to rescue diseased structures and to repair them. The selective and retentive power of the cell for calcium salts is probably in part under the influence of the calcium regulating factors. The authors believe that there is no such thing as calcareous degeneration. The thing which does happen is a calcification—the result of a reparative process—in diseased structures. Calcium salts play a large part in the health of the individual, even while circulating in the blood. The lime salts are largely concerned in the contraction of involuntary muscle throughout the body. The authors refer to the calcium content of the blood in relation to its coagulability, and from many experiments and observations answer in the negative the question whether there is not a certain element of danger in the free administration of calcium salts. The calcium index under normal circumstances can not be forced much beyond the usual maximum, and if the vessels were healthy, clotting would not occur. The authors suggest that the alteration in the calcium economy at the menopause may be accountable to some extent for the deposition of fat, and further, that the deficient excretion of calcium soaps by the bowel in physiologically active women may be the cause of the ever present evil of chronic constipation. The coagulating element in gelatin, the authors suggest, may be its calcium content, while they found that the prolonged action of ammonium oxalate—but not of other salts—prevented coagulation by precipitating the calcium. They discuss the action of the ductless glands in regulating calcium metabolism, and refer particularly to the finding of Sir James Barr, who, at the authors' suggestion, observed that the administration of calcium salts markedly lowers the pulse rate and causes symptomatic improvement in exophthalmic goiter. They believe that an intimate connection exists between the pituitary extract and the calcium metabolism; that the ovaries and possibly the testes, influence calcium metabolism; and, that the ductless glands preserve a balance in the calcium metabolism—as they do in many other metabolic processes—one acting anabolically, another katabolically.

3. **Sleep and Want of Sleep.**—Farquharson describes various cases of a natural tendency to somnolence, and asks what the precise physiologic conditions are under these varied circumstances. Anemia can not explain them all, nor can a full-blooded brain. He discusses the use of tea, hot water, a nightcap of whisky (hot or cold), light nourishment before retiring, regulation of the bed clothing, the avoidance of heavy suppers, and particularly champagne, the suppression of regular noises, the soothing influence of music, various devices such as counting, etc., and finally, when all these fail, the use of soporifics. On this point he says: "Some physicians—rather pedantically, I think—will not give their sleepless patients relief by drugs for fear they get into the habit of taking them regularly. Of course, we can not altogether ignore this view; but Sir Lauder Brunton, the wisest and most suggestive of modern physicians, once put the case in a nutshell by saying, 'Insomnia is a bad habit, and may become permanent if we do not break it.'" Farquharson emphasizes the particular application, to this class of drugs, of the old saying: "One man's meat is another man's poison."

4. **Syphilis of the Nervous System.**—In the third Morison lecture, Mott discusses parasyphilis and heredosyphilis. He quotes Fournier's classification of parasyphilitic affections, divided primarily into those due to acquired and to hereditary syphilis. He discusses tabes at length. He confesses himself a believer in the theory "no syphilis, no tabes." He believes that there is probably one essential cause—syphilis acquired or congenital and that there are a number of contributing factors, any one of which by itself or even in combination with others—for example, sexual excess, mental stress, heredity, injury, etc.—in the absence of syphilis is not capable of producing the disease. He cites instances to show how, in spite of investigation, syphilis, particularly hereditary syphilis, is apt to be overlooked. Antisyphilitic remedies are useless. In-

deed they are generally positively injurious in true tabes and general paralysis because they lower the vital energy of a system which has overimmunized itself against the syphilitic virus. The only hope of doing good is by early diagnosis and suppression of all exciting causes that use up nervous energy, and tend to overturn the normal metabolic equilibrium of the nervous structures.

Lancet, London

February 27

8 *The Functions of the Liver and the Metabolism of Fats. J. B. Leathes.
9 Hernia of the Iliopelvic Colon. H. B. Robinson.
10 Anuria with Necrosis of the Renal Convoluted Tubules. F. P. Weber.
11 Addisonism as a Family Disease. D. H. Croom.
12 Injury to the Semilunar Cartilages of the Knee. R. Morison.
13 *Pancreatic Secretion in Treatment of Diabetes. W. M. Croftan.
14 Case of Hepatic Abscess (?) Treated by a Vaccine; Recovery. J. H. E. Brock.

8. **The Liver and Fat Metabolism.**—Leathes considers it a good working hypothesis, that the liver stands in a different relation to circulating fat from the other organs of the body. Its work is to take up this fat and bring about certain changes in it, the result of which is to make this material available for the use of the organs in which its potential energy is required. It converts food fat into organized fat, the desaturation of fatty acids being a change which occurs after that conversion has taken place: a change that is removed from our ken so long as our knowledge of the nature and constitution of these lipoid molecules is as meager as at present. The change may be brought about behind the veil within the mysterious circle of influence of the phosphoric acid and the nitrogenous basic constituents of these more complex molecules.

13. **Pancreatic Secretion and Diabetes.**—Croftan considers it probable that severe glycosuria—that is, glycosuria produced from both carbohydrates and proteins—is in some way or other due to failure in the pancreatic functions, possibly of an internal secretion. This failure may come about in several ways. (a) The chyme entering the duodenum, etc., may not be acid enough to change the prosecretin into secretin. (b) It may be due to the absence of secretin from the intestinal mucosa. (c) It may be due to the loss of function of the cells producing the internal secretion—that is, to disease of the pancreas. In treating a case of diabetes, our first desire must be to remove the cause of the disability of the pancreas. If it is due to the deficient acidity of the gastric juice leading to deficient conversion of prosecretin into secretin, administer acids. It is possible that some of the cases of transient glycosuria may be due to this cause. If it is due to the absence of prosecretin, he advises giving secretin; some patients with diabetes have been cured by this means. He refers to the embryologic work of Beard as having thrown light on the change that takes place in the nutrition of the fetus when the pancreas becomes functional. The cells of the fetus, instead of preparing their own food by means of their intracellular ferments, have food prepared for them by the extracellular ferments of the pancreas; their food is no longer the dextroproteid and levosugars, but levoproteid and dextrosugars. The manner in which the pancreas effects this change is obscure. It can not be due to its external secretions, for in diabetes these are generally sufficient; it must be due to some substance absorbed into the blood, that is, to an internal secretion of some kind. It is, therefore, easy to realize the profound change that takes place when the pancreas loses its function; in the absence of the internal secretion the tissue cells again become dependent on their own intracellular ferments as they were in the precritical period when they lived on levosugars (this is a possible explanation of the observation that levulose is better borne by diabetics than dextrose), and thus the dextrosugar with which they are supplied can not be used, the percentage of dextrose in the blood rises, and it is excreted by the kidneys.

Medical Press and Circular, London

February 24

15 *Uncommon Types of Common Diseases. J. A. Lindsay.
16 Radical Operations for the Cure of Backward Displacements of the Uterus. H. Jellett.
17 Shrapnel Wounds. Marine-Oberassistenzarzt Sheel.

15. **Common Diseases.**—The diseases discussed by Lindsay are pneumonia, typhoid, scarlatina, pulmonary tuberculosis, aneurism, gastric ulcer, pernicious anemia and cerebral tumor. He has seen several cases of pneumonia in which the temperature remained normal throughout, and many cases in which the onset was spread over three or four days, the early symptoms being vague. In pneumonia ephemeris the attack sets in with characteristic signs, but comes to an abrupt termination in two or three days, the verdict often being only a "severe cold." He cautions against mistaking pneumonia for meningitis, which may be avoided by attention to the alae nasi. In typhoid he has known the bowels to act normally throughout the attack and the tongue to remain clean, while one patient died suddenly from profuse intestinal hemorrhage in whom a few hours before death the abdomen was relaxed, free from distention, pain or tenderness, and the pulse good. A robust physique and a well-developed thorax are no certain protection against tuberculosis. The disease may make considerable progress without either pyrexia or loss of flesh. A chronic fibroid tuberculosis of one upper lobe, with emphysema of the adjacent portions of the lung, may produce a clinical syndrome closely resembling that of asthma. It is well to accept pernicious anemia as a provisional, rather than a substantive diagnosis and always to search carefully for a primary cause, bearing in mind that only time and a careful diagnosis by exclusion justify pernicious anemia as a final diagnosis.

Clinical Journal, London

February 24

18 *The Significance of Fever in Patients from the Tropics. Sir P. Manson.
19 Fits After Forty. C. Thomson.
20 Some Unusual Symptoms in Myasthenia Gravis. F. E. Batten.

18. **Fever in Tropical Patients.**—Manson says that in patients coming from the tropics there are two principal diseases from the patient's standpoint, namely intestinal flux and fever. Manson discusses the latter. As a rule, he says, the physician will find that his diagnosis has been made for him. The patient "has malaria" and he wants you to treat it. If you follow this course you will often make a grievous mistake. Never trust the patient's diagnosis, and never trust a diagnosis of malarial fever, because in nine cases out of ten it is wrong. Manson's first rule is to ignore the fact that the patient has been in the tropics. Look at him as an ordinary patient, and eliminate the possibility of an ordinary European disease before taking the tropics into consideration. Think of tuberculosis, syphilis, malignant and local disease. Examine the organs from head to foot, not forgetting the frontal sinuses. He records a case of apparently Roman malarial fever which turned out to be due to the retention of pus in the nose. Manson particularly emphasizes obscure malignant disease as being a cause of undetermined fever. Abscess of the liver is apt to be mistaken for malaria. Having eliminated all ordinary causes of fever and arrived at the conclusion that the disease is a tropical one, the question is, "What." Malaria is the most common. There are three infallible tests of malaria: periodicity, the therapeutic test with quinin, and the blood examination. Quotidian periodicity, however, is not a property peculiar to malarial fever, but occurs in all septic infective conditions. Tertian or quartan periodicity are absolutely pathognomonic, however. If the patient gets quinin properly administered in an adequate dose, and the fever does not respond in from 48 to 72 hours, the disease is not malaria. If quinin is used, it is important that it should be administered in such a way that it can be absorbed. Dumping tablets or capsules into a furred alimentary canal is useless. Among subsidiary tests are marked enlargement of the spleen, a shooting and falling temperature curve, and the temperature rise early in the day. Liver abscess is the next most common tropical disease. It is almost invariably the sequel of dysentery. The fever is quotidian and does not respond to large doses of quinin. There will be leucocytosis instead of leucopenia. Aspiration must be practiced with great caution; death has ensued from hemorrhage into the peritoneal cavity after it. The author

discusses Malta or Mediterranean fever, which occurs also in other parts of the world—Africa, India, Hong Kong—and in which he does not put any confidence in serodiagnosis. He reports a case in which he submitted the blood for examination to two laboratories, for diagnosis between recurrent middle-ear disease and Malta fever. The first laboratory reported Malta fever and not typhoid fever; the second reported typhoid and not Malta. He finally went to the fountain head, Professor Wright, who reported that there was no typhoid and no Malta fever. Manson further discusses relapsing fever, trypanosomiasis, kala-azar, elephantoid fever, and leprotic fever. It is important to remember that elephantiasis and leprosy are both liable to be acompanied by fever.

Journal of Obstetrics and Gynecology of the British Empire, London

February

21 Rosslin's "Rosegarten"; Its Relation to the Past (the Muscio Manuscripts and Soranos), Particularly with Regard to Podalic Version (concluded). E. Ingerslev.
22 Pre-Maternity Hospital Practice: Thirty Cases of Morbid Pregnancy Treated in the Royal Maternity Hospital, Edinburgh. J. W. Ballantyne.
23 What is the Pelvic Floor? A Criticism; in which the Position of the Urinary Bladder During the Latter Months of Pregnancy and During Labor is Considerd. R. H. Paramore.

Intercolonial Medical Journal of Australasia, Melbourne

January

24 Two Hundred Cases of Appendicitis. R. A. Stirling.
25 Two Cases of Subperiosteal Bone Implantation. R. H. Russell.
26 *Operative Treatment in Fracture of the Base of the Skull. D. M. Morton.
27 Chloroform in Anemia. R. T. Sutherland.
28 An Analysis of 5,000 Cases of Diseases of the Skin Occurring in Australasia. A. W. F. Noyes.
29 Case of Loss of Memory. W. A. T. Lind.
30 The Appendiculo-Ovarian Ligament and Retroversion of the Uterus. G. Horne.

26. **Fracture of Base of Skull.**—Morton considers that in a considerable number of cases of fracture of the base of skull, in which recovery seems hopeless, operative treatment not only offers a prospect of life, but, from its almost complete freedom of risk, is due to the patient. The immediate danger after severe head injury arises usually in compression from extravasated blood. Morton quotes Cushing, in Keen's "Surgery," and says that it is due to the patient in every grave head injury, especially basal fractures, to be promptly placed under the closest supervision, and probably in most cases promptly subjected to the safer course of operative interference, rather than to the hazardous expectant treatment. It might be safely laid down that, in all cases of severe head injury—whether the diagnosis of fracture of the base is made or not—associated with grave or increasing symptoms of compression, a decompressive operation should be promptly resorted to. In the absence of symptoms indicative of hemorrhage from the middle meningeal artery, or of other focal symptoms, and in probably all cases of fracture of the base of the skull, the occipital route will give easier and safer access, and more efficient drainage than the temporal route, as preferred by Cushing.

Annals of Tropical Medicine and Parasitology, Liverpool

February

31 Treatment of Experimental Trypanosomiasis. B. Moore, M. Nierenstein and J. L. Todd.
32 An Unusual Case of Goundou. R. W. Orpen.
33 Subdrainage as Applied to the Antimalarial Campaign on the Isthmus of Panama. H. Simms.
34 A New Culicid Genus. F. V. Theobald.
35 The Inflicted Talipes of the Chinese. F. Jeans.
36 *Porocephalus Moniliformis.* A. Broden and J. Rodhain.
37 A New Human Nematode, *Strongylus Gibsoni.* J. W. W. Stephens.
38 The Supposed Occurrence of *Filaria Immitis* in Man. J. W. W. Stephens.
39 A New Porocephalus. *(Porocephalus Cercopitheci).* A. Breinl and E. Hindle.
40 Comparative Chemotherapeutic Study of Atoxyl and Trypanocides. M. Nierenstein.
41 Chemical Notes on Atoxyl. M. Nierenstein.
42 Sur le rôle des Tabanides dans la Propagation des Trypanosomiases. E. Sergent.

Annales de l'Institut Pasteur, Paris

January, XXIII, No. 1, pp. 1-95

43 Histo-physiologic Study of Aseptic Autolysis of the Liver. L. Launoy.
44 *Research on Typhoid Fever. H. Dunschmann.
45 The Blood in Experimental Trypanosomiasis. (Action sur la formule hémato-leucocytaire dans la trypanosomiase expérimentale du traitement par l'émétique.) M. Leger.
46 Biochemical Study of Two Anaërobes of Intestine Content. A. Berthelot.
47 Biologic Study of *B. perfringens* and *B. putrificus.* W. Korentchevsky.

44. **Diagnosis of Typhoid.**—Dunschmann reports considerable research which has shown to his satisfaction that the promptest and most reliable means for early diagnosis of typhoid fever is to make cultures from the blood during the first week of the disease. He states that the usual bile or Conradi technics should be regarded as obsolete now, the addition of sodium taurocholate to the peptonized bouillon being much more effectual. This technic has the further advantage that the taurocholate prevents coagulation of the blood.

Annales de Médecine et Chirurgie Infantiles, Paris

February, XIII, No. 3, pp. 73-108

48 Functions of the Tonsils and Organotherapy of Disturbances. (Fonction amygdalienne.) J. Glover.
49 Asystoly in Children. (Asystolie chez les enfants.) A. Mousous.
50 *Edema and Anasarca in Infants. P. Lereboullet and A.-P. Marcoreles.

50. **Edema and Anasarca in Infants.**—Lereboullet reports five cases of edema and anasarca in infants, cured by specific treatment in one case evidently the result of inherited syphilis. In another case the trouble was traceable to a liver affection, and in another to septicemia. The other cases demonstrate that edema and anasarca are liable to result merely from gastrointestinal disturbance, even when it is apparently mild. The anasarca of digestive origin is the result of well-defined lesions in the organs involved for which the gastrointestinal affection is primarily responsible. As a rule, by the time the anasarca has developed it is too late to arrest the consequences. In this respect the prognosis is much graver in infants than in older children and in adults. Although the gastrointestinal trouble may be regulated, the damage done is already irreparable.

Bulletin de l'Académie de Médecine, Paris

February 9, LXXIII, No. 6, pp. 203-217

51 Medicine Among the Natives of Sumatra. (La Médecine des Bataks.) Kermorgant.

Obstétrique, Paris

II, N. S., No. 1, pp. 1-80

52 *Serodiagnosis of Syphilis in the Pregnant and in New-Born Infants. P. Bar and R. Daunay.
53 *Difficulties of Repeated Cesarean Section on the Same Patient. A. Brindeau.
54 Two Cases of Twin Pregnancy with Single Ovum. (Grossesse gémellaire univitelline avec amnios unique et cordons noués.) G. Pallin.

52. **Serodiagnosis of Syphilis in Pregnant Women and New-Born Infants.**—Bar and Daunay have applied the Wassermann test to 82 pregnant women and tabulate the findings. Negative results were obtained in several cases of unmistakable syphilis so that negative findings do not justify the assumption that the woman is free from syphilis. But a positive result, in countries where trypanosomiasis is not prevalent, justifies the conclusion that the woman is infected. Their experience shows that the proportion of positive findings is much less when the women have been properly treated. A positive result should be accepted as the proof of active syphilitic infection, either in the woman or the fetus, or both, requiring specific treatment. The article is to be continued.

53. **Repeated Cesarean Section in the Same Woman.**—Brindeau has done a second Cesarean section on six women. The operation is more serious on account of the liability to adhesions and weakening of the wall of the uterus. He advises cutting out the old cicatrix and sterilizing the woman if the uterine walls are abnormally thin, but not otherwise.

Presse Médicale, Paris

February 13, XVII, No. 13, pp. 105-120

55 Operative Indications with Uterine Fibromas. J.-L. Faure.
56 Hordenin Sulphate in Therapeutics. J. Sabrazès and G. Guérive.
57 Hitherto Undescribed Tropical Febrile Affection. (Une fièvre des pays chauds non encore décrite.) M. Crendiropoulo.
58 New Methods of Electric Treatment of Traumatic Muscular Atrophy. Delherm and Laquerrière.
59 Typhomalaria in Palestine. E. Arab.

February 17, No. 14, pp. 121-128

60 *Ichthyosis and Thyroid Anomalies. E. Weill and G. Mouriquand.
61 Difficulties of Diagnosing Incipient Coxalgia. J. Calvé.

February 20, No. 15, pp. 129-136

62 Gastrointestinal Disturbances in Incipient Scarlet Fever. (Les troubles gastrointestinaux du début de la scarlatine.) C. Lesieur and L. Baur.
63 Necessity for Restriction of Tea, Coffee and Chocolate with Excess of Uric Acid in the Urine. A. Martinet.

60. **Thyroid Treatment of Ichthyosis.**—Weill and Mouriquand report in detail two cases of congenital ichthyosis in which the connection between the affection and defective functioning of the thyroid was plainly apparent. The first patient was a child with congenital ichthyosis and signs of latent myxedema. Thyroid treatment was commenced at the age of five months; in two months the ichthyosis had mostly subsided and in two months still later it had entirely disappeared. The thyroid treatment was then suspended and a preparation of arsenic given, when the ichthyosis returned, but yielded again to resumption of thyroid treatment which the child seemed to tolerate perfectly. All evidences of myxedema had likewise vanished and the child is now normally intelligent and lively. A second child born later also presented the congenital ichthyosis. The effects of thyroid treatment were equally evident in the second case reported, in which there were also signs of myxedema and a mongolian aspect. In conclusion, they review a number of cases from the literature in which the ichthyosis coincided with total absence of the thyroid or destructive lesions in the gland or with symptoms indicating defective or perverted thyroid functioning. Bourneville has encountered five cases of ichthyosis in children with myxedema. In another group of cases the connection between the ichthyosis and the thyroid was evidenced only by the prompt cure under thyroid treatment. Weill is convinced that certain cases of ichthyosis ascribed to inherited syphilis were really of thyroid origin, the thyroid lesion being possibly secondary to the syphilis. He believes that sufficient data are at hand to demonstrate the influence of the thyroid on the nutrition of the subcutaneous cellular tissue (myxedema) and of the derma (scleroderma in exophthalmic goiter and in myxedema). It is logical, therefore, to ascribe a similar influence to it in the development of the superficial layer of the skin, so that disturbance in thyroid functioning may possibly entail ichthyosis.

Revue de Chirurgie, Paris

February, XXIX, No. 2, pp. 229-444

64 *Treatment of Aneurisms at the Base of the Neck by Simultaneous Ligation of the Right Common Carotid and Subclavian Arteries. Ligation of Thoracic Aorta. A. Guinard.
65 *Radical Operation for Cancer of the Biliary Passages. (Cancer des voies biliaires.) E. Quénu.
66 *Results of Hyperemic Treatment. (Quelques résultats de la méthode de Bier.) R. Dupont.

64. **Treatment of Aneurism in the Neck.**—Guinard reviews the various methods of treating aneurisms of the base of the neck and commends simultaneous ligation of the carotid and subclavian on the right side, commencing always with the carotid. He says that the aneurism can be pushed to one side if it hides the vessels to be ligated. Silk or catgut can be used, and drainage is not necessary unless the operation has been particularly long and difficult. His experience with fifteen cases has shown, he asserts, that this technic is simple and harmless. This method of treatment is applicable for all aneurisms at the base of the neck, whether on the ascending portion of the aorta to the right or on the subclavian or common carotid. The results are better, the greater the distance between the aneurism and the heart. The symptoms in respect to the pulse, sphygmography and compression of neighboring organs are deceptive, but radioscopy may render good service. Recent statistics in regard to aneurism of the innominate artery or its branches report 100 per cent. operative cures. In conclusion, Guinard relates a case of aneurism at the left end of the arch of the aorta in which the patient insisted on operative intervention as the last resort. He ligated the aorta below the aneurism, which was very easily done. As the ligature was drawn tight the femoral pulse stopped at once and the lower part of the body grew pale and cold, but in less than fifteen minutes circulation became re-established and the parts grew warm again. The upper part of the trunk and the head began to sweat profusely, suggesting that the kidneys were not working properly and that uremia was impending. This proved to be the case, and the patient succumbed to total anuria, the result of the reduction in the blood pressure in the renal arteries. After ligation of the aorta in the thorax the intercostal anastomoses were sufficient to supply the abdominal aorta and the legs with blood, but the physiologic functions of the kidney, requiring a considerable degree of blood pressure in the renal arteries, were totally arrested by the reduction in the intra-arterial pressure. This is the reason why ligation of the aorta above the renal arteries proves inevitably fatal.

65. **Cancer of the Biliary Passages.**—Quénu presents the balance-sheet of these operations and discusses the different types in detail. He knows of only a single case of permanent cure, and the limitation of the cancer seems to be the only justification for intervention. He adds that until we can differentiate circumscribed cancer of the common bile duct or of the ampulla of Vater, chance alone will reveal the really operable cases and yield an exceptional success.

66. **Hyperemic Treatment of Surgical Tuberculosis.**—Dupont reports fourteen cases in which Bier's various hyperemic measures were employed. Bier's technic was followed in every detail except that treatment was not kept up so long as he advises. The results were only fair or uncertain, and seem to show that while constriction hyperemia is harmless and may be useful in "open" tuberculosis, it is dangerous in the "closed" cases.

Archiv für Gynaekologie, Berlin

LXXXVII, No. 2, pp. 233-495. Last indexed Jan. 30, p. 422

67 *Operative Treatment of Uterine Carcinoma. A. Scheib. Commenced in No. 1.
68 *Uterine Carcinoma and its Metastases in Pleura and Lungs. H. Offergeld.
69 *Uterine Carcinoma and its Metastases in the Abdominal Cavity. (Die Metastasen in der Bauchhöhle beim Uteruscarcinom.) Id.
70 Activity of Ovary during Pregnancy. (Thätigkeit des Ovariums in der Schwangerschaft.) O. O. Fellner.
71 *Prognostic Importance of Bacteriologic Examination in Abdominal Removal of the Uterus for Carcinoma. C. Barth.
72 Corpus Luteum and Impermeable Follicles in the Human Ovary, and their Cystic Derivatives. F. Cohn.
73 Carcinosarcoma of the Uterus. H. Forssner.
74 Hemolysis by Streptococci during Pregnancy and Puerperium. W. Sigwart.

67. **Uterine Carcinoma.**—Scheib comments rather pessimistically on the chances of cure of uterine cancer when the lymph nodes in the region are already involved. Even when the operation is extremely extensive, the outcome is not much better than without. Extensive abdominal operation is liable to give results unattainable with simple vaginal extirpation in cases of carcinoma of the cervix involving adjoining tissue or the vagina. The mortality of the most extensive operations does not seem to be any higher than with the less mutilating, and will undoubtedly be still further reduced. His article is based on the experiences with uterine cancer at Kleinhans' clinic at Prague; this material is classified and analyzed from various points of view, especially the remote results, and compared with the reports from other clinics.

68. **Metastasis of Uterine Cancer in Pleura and Lungs.**—Offergeld states that study of the literature has shown that metastasis in the lungs of uterine carcinoma is encountered in from 5 to 7 per cent. of all cases, but does not cause symptoms. The metastases are generally found in the central tissue and the marginal portions of the lower lobe, similar to the location of infarcts. Metastasis in the pleura is much rarer, and occurs only in advanced stages of uterine cancer.

69. **Metastasis of Uterine Carcinoma in the Abdomen.**—Offergeld summarizes his study of this subject in the statement that secondary nodules may develop in the peritoneum even during the early phases of uterine carcinoma, but, as a rule, this does not occur until an advanced stage. The favorite points for them are in Douglas' cul-de-sac and the vault of the diaphragm. He does not attempt to determine whether these nodules are secondary or merely indicate a primary multiplicity of the cancer. The secondary nodules in the omentum and muscles of the intestinal tract are of lymph-borne origin. They may cause a tumor with peritonitis and stiffening of some part of the intestine, but they usually de-

velop without symptoms. There is metastasis in the liver in from 5 to 15 per cent. of all cases, and the secondary growth should be excised with the uterine cancer. The biologic ferment action of the liver wards off cancerous invasion, which does not occur unless the functioning of the organ is impaired. If metastasis develops, it usually runs an insidious course, which is also the case when the metastasis is located in the pancreas—an extremely rare occurrence. This metastasis is generally in the head of the pancreas. In one case on record it was differentiated by the "obstructive jaundice," and in another by the positive findings with Sahli's guiaiol capsule test.

71. **Bacteriologic Examination of Uterine Cancer Before Operation.**—Barth relates experiences to sustain his assertions in regard to the necessity for bacteriologic examination to determine the prognosis of surgical measures. He has found that about 50 per cent. of all cases of uterine cancer show infection with hemolytic streptococci. Their presence in the peritoneum, determined while the patient is still on the operating table, after closure of the wound in the floor of the pelvis, is a bad sign. He urges the importance of further search for measures to re-enforce the peritoneum in its struggle against hemolytic streptococci.

Berliner klinische Wochenschrift

February 15, XLVI, No. 7, pp. 285-332

75 Examination and Prognosis of Injuries of Internal Ear. (Untersuchung und Begutachtung der Verletzungen des inneren Ohres.) B. Heine.
76 Visceral Ptosis a Constitutional Anomaly. A. Albu.
77 Case of Professional Roentgen-Ray Carcinoma. H. Coenen.
78 Implantation Carcinoma in Bladder Mucosa. (Implantationscarcinoma in der Harnblasenschleimhaut.) S. Suzuki.
79 Transient Intoxication from Bismuth Paste Treatment of Fistulas. (Zur Wismuthbehandlung nach E. Beck.) F. Rosenbach.
80 Differential Importance of Puncture of the Brain. (Hirnpunktion.) E. Forster.

February 22, No. 8, pp. 333-380

81 Transplantation of Pieces of Vessels in Other Hollow Organs. (Versuche zur Transplantation lebender Gefässstücke auf andere Hohlorgane des Körpers.) A. Tietze.
82 New Apparatus for Maintaining Positive Pressure in the Lungs during Operations. (Wert des Druckdifferenzverfahrens für die Lungenpleurachirurgie, und über eine neue Ueberdruckkammer.) F. Karewski.
83 *Visceral Ptosis. (Zur Lehre von der Splanchnoptose.) L. Landau.
84 Local Irritation and Reactions of the Skin. (Lokale Hautreize und Hautreaktionen.) Külbs.
85 *Diagnosis of Pancreatic Affections. (Zur Diagnose der Pankreaserkrankungen. Die Cammidge'sche Reaktion.) F. Eichler and H. Schirokauer. Id. L. Caro and E. Wörner.
86 Chemical Test for Adrenalin in Blood Serum. G. Comessati.

83. **Visceral Ptosis.**—Landau protests against the assumption that visceral ptosis is always a congenital condition, a sign of degeneracy. He thinks that it is the result of various factors which debilitate and relax the abdominal walls. The aim should be to remove the cause, nourish the patient by rest and superfeeding, restoring tone and elasticity to the abdominal walls by physical measures, hydrotherapy, massage and electricity. Above all, efforts must be made to strengthen the different abdominal muscles, the transverse and oblique, etc. A number of the Swedish movements are especially adapted to stimulate to independent contraction the various muscles in the back, chest and abdomen and thus strengthen them. In addition to these measures, suitable bandages or corsets should be worn while at work to support and retain the viscera in their proper place. He has been so successful with treatment along these lines in a large number of cases that his success proves the correctness of this conception of the etiology and curability of enteroptosis. It renders the outlook for treatment much more encouraging than if the condition be accepted as a congenital anomaly.

85. **Diagnosis of Affections of the Pancreas.**—This communication from Senator's clinic at Berlin gives the result of application of the Cammidge test to the urine in a large number of dogs with experimental pancreatitis. The findings were positive in only a few cases and only occasionally in them, so that the results conflict with the assertions of Cammidge in respect to the frequency of the reaction. The findings were also negative in two patients operated on later, one with chronic indurative pancreatitis with atrophy; the other with fat tissue necrosis. Caro and Wörner report a case of subacute hemorrhagic pancreatitis and one of atrophy of the pancreas from compression by a sarcoma in the stomach wall; in both these cases the Cammidge reaction was positive.

Correspondenz-Blatt für Schweizer Aerzte, Basle

February 1, XXXIX, No. 3, pp. 73-104

87 Extension Treatment of Fractures. (Behandlung der Knochenbrüche durch Extension.) A. Wettstein.
88 *Congenital Malformation of the Radius. K. v. Sury.

February 15, No. 4, pp. 105-144

89 Value of Iodoform Filling for Cavities in Bone. (Ueber die v. Mosetig-Moorhof'sche Jodoformknochenplombe.) H. Brun.
90 Medicinal Treatment of Hyperacid Conditions in the Stomach. (Hyperaciditätszustände des Magens.) P. Rodari.
91 Rupture of Symphysis during Delivery. P. Scheurer.

88. **Congenital Malformation of the Radius.**—Sury reports two cases of malformation of the radius with backward dislocation, the radius and ulna having grown together at the upper end in one case. The backward dislocation of the radius in the other case was bilateral and the mother, grandmother and a sister of the latter all had the same deformity. The malformation interferes with work, as supination is impossible, and when this dislocation follows a trauma it entails serious incapacity. The literature on the subject is reviewed.

Deutsches Archiv für klinische Medizin, Leipsic

XCV, Nos. 3-4, pp. 211-406. Last indexed Feb. 18, p. 598

92 Breaking Down of the Amino Acids in the Healthy and Diseased Organism. (Abbau der Aminosäuren.) O. Neubauer.
93 Intra-abdominal Pressure with Ascites. (Ueber den intraabdominellen Druck bei Ascites.) W. Weitz.
94 Infectious Endarteritis and Formation of Nodules in Malignant Rheumatic Endocarditis. (Zur Kenntnis der sogenannten Endarteriitis infectiosa und der Knötchenbildung bei rheumatischer maligner Endokarditis.) R. Takayasu.
95 Research on Purin Metabolism and on Influence of Alcohol on Elimination of Uric Acid. (Zur Lehre vom Purinstoffwechsel und zur Frage über den Alkoholeinfluss auf die Harnsäureausscheidung.) A. Landau.
96 Position of Stomach, Erect and Recumbent. (Lage des Magens im Stehen und Liegen.) Hiller.
97 *Case of Complete Obliteration of Aorta at Mouth of Botallo's Duct. H. Strassner.
98 Uric Acid Content of Arterial Blood. (Ueber den Harnsäuregehalt des arteriellen Blutes.) P. Salecker.
99 Action of Products of Digestion from Typhoid Bacilli. (Wirkung von Verdauungsprodukten aus Typhusbazillen.) M. Matthes.
100 Non-bacteriolytic Preventive Serum against Typhoid Bacilli. Id.
101 *Treatment of Bronchial Affections by Raising the Foot of the Bed. (Behandlung von Bronchialerkrankungen mit Schräglage.) P. Schäfer.
102 Yeast Fungi in Urine. (Vorkommen von Hefe im Urin.) A. Weber.

97. **Complete Obliteration of Aorta at Botallo's Duct.**—Strassner's patient was a shoemaker of 36 who had acute articular rheumatism twice before 18, but had been healthy since until 1907 when he acquired a cough and the abdomen became enlarged with progressive signs of aneurism of the aorta and mitral insufficiency. Autopsy revealed complete obliteration of the aorta at Botallo's duct, evidently a congenital malformation.

101. **Treatment of Bronchial Affections by Raising the Foot of the Bed.**—Schäfer reports the experiences at Quincke's clinic at Kiel with the sloping position—*Schräglage*—suggested by Quincke to utilize the force of gravity to promote expulsion of bronchial secretions. The patients lie flat in bed, on the back, the head turned to one side to be able to expectorate more readily. When they have learned to do this, the foot of the bed is raised from 8 to 12 inches for two or three hours every morning, before 9 a. m., and again in the evening if desired. It is astonishing to observe the amounts of secretion which are expelled at times under these conditions, the patients being relieved so that they are free from cough and expectoration for the rest of the day, and fever from the retained secretions rapidly subsides. In the 29 cases related, benefit was pronounced whenever it was possible to influence the accumulated secretions by the force of gravity. The method is especially useful for all cases of sac-shaped and cylindrical bronchiectasia of the lower lobes, accompanied by chronic cough and expectoration. It is also useful in catarrhal conditions, with acute onset but long-protracted course, especially in elderly people with their less elastic thorax and bronchi. The method is also valuable for locating the source of the secretion by the success or failure of the measure.

Deutsche medizinische Wochenschrift, Berlin

February 18, XXXV, No. 7, pp. 281-328

103 Treatment of Inebriety. (Behandlung der Trunksucht.) L. W. Weber.
104 Specific Organotherapy of Incipient Senile Cataract. (Spezifische Organtherapie des beginnenden Altersstares.) P. Römer.
105 *Tuberculin Treatment of Tuberculosis in Infants and Children. (Therapeutische Verwendung des Tuberkulins bei der Tuberkulose der Säuglinge und Kinder.) A. Schlossmann.
106 Food Requirements of Backward Infants. (Energiebedarf der in der Entwicklung zurückgebliebenen Säuglinge.) J. Rosenstern.
107 Kuhn's Peroral Tube with Reference to Positive Pressure Technic. (Die Kuhnsche Tubage mit Berücksichtigung des Ueberdruckverfahrens.) F. Lotsch.
108 Report of 3,000 Cases of Scopolamin-Chloroform-Ether Anesthesia. J. Schoemaker.
109 Convenient Method of Local Application of Moist Heat or Alcohol. (Bequemer warmer Umschlag.) Schimmelpfennig.

105. **Tuberculin Treatment for Infants and Children.**—Schlossmann has found tuberculin very useful in treatment of children, but the tuberculous child does not react with formation of antibodies until rather large doses are given. Treatment should therefore commence with a stage of small doses, to render the child's organism tolerant to the tuberculin. This should be followed by a period of prolonged treatment with large doses at suitable intervals, and production of antibodies follows. He has never observed untoward effects from the large doses in any case. He is convinced that the children were doomed from the start in the cases in which the cautious use of tuberculin failed to arrest the tuberculous process. These occasional failures should not deter from the use of tuberculin, which he regards as the best means of diagnosis and therapeutics at our disposal in the fight against tuberculosis in children. Among the experimental experiences related were some with guinea-pigs artificially fed after birth; deprived of their natural food they displayed much less resistive vitality. The child reacts to tuberculin with vigorous production of antibodies when it has reached a tolerance for the dose of 0.1 gm. (1.5 grains) of tuberculin.

Deutsche Zeitschrift für Chirurgie, Leipsic

February, XCVII, Nos. 3-4, pp. 177-438

110 Experimental Research on Coagulation-Inhibiting Influence of Hirudin in Living Organism. (Gerinnungshemmenden Einfluss des Hirudin im lebenden Tierkörper.) H. Rimann and W. Wolf.
111 *Rovsing's Symptom of Appendicitis. O. Füster.
112 *Transplantation of Thyroid Tissue in Various Organs. (Schilddrüsenverpflanzungen in verschiedene Organe.) A. Carraro.
113 Anomalous Formation of Mesentery and its Relation to Ileus. (Anomale Mesenterialbildung und ihre Beziehung zur Aetiologie des Darmverschlusses.) G. E. Konjetzny.
114 *Surgical Treatment of Cancer of the Lip. (Zur chirurgischen Behandlung des Lippenkrebses.) P. Steiner.
115 *Acute Inflammation and Hyperemic Treatment. (Behandlung akuter Entzündungen mit Bierscher Stauungshyperämie.) W. Lossen.
116 *Tuberculous Glandular Processes in the Neck. (Halsdrüsentuberkulose mit besonderer Berücksichtigung ihrer Chirurgie.) A. Most.
117 Nature of Hemorrhoids. (Wesen der Hämorrhoiden.) R. Torikata.
118 Improvisation of a Brauer Positive-Pressure Apparatus for Experimental and Clinical Work. (Improvisierung eines Brauerschen Ueberdruckapparatus für Operationen.) H. Eggenberger and H. Iselin.
119 Contusion of Abdomen with Rupture of Wall and Total Transverse Section of Intestine. T. Haagn.

111. **Indirect Production of Pain at McBurney's Point.**—Füster has been testing Rovsing's sign in 62 cases suggesting appendicitis; pressure was applied on the left side at a spot corresponding to McBurney's point on the other side. Rovsing found that pain could be thus indirectly elicited at McBurney's point, and suggested this as another sign of appendicitis. Füster's experiences fail to confirm the reliability of the sign, as there did not seem to be any regularity in the findings. They were negative in a number of typical cases of appendicitis, constantly negative in 12 chronic cases and in 8 very mild acute cases and in 8 out of 12 gangrenous cases before perforation and in 22 out of 28 similar cases after perforation. The sign was particularly pronounced in a case which proved to be one of sarcoma of the kidney with the region of the appendix normal.

112. **Transplantation of Thyroid Tissue.**—Carraro obtained the best results in his experimental research with thin discs of thyroid tissue implanted in the subcutaneous tissue. One side of the transplanted piece must be still covered with some of the connective tissue capsule of the thyroid gland to ensure its vitality.

114. **Cancer of the Lip.**— Steiner states that during the last ten years 158 primary operations were done for cancer of the lip at Dollinger's clinic at Budapest. About 70.7 per cent. of the patients with primary operation were free from recurrence at the end of three years, and 69.6 per cent. at the end of five, and 10 per cent. of the 42 patients requiring operation for recurrence.

115. **Hyperemic Treatment of Acute Inflammations.**—Lossen declares that Bier is to be credited with a great advance in the treatment of suppurative inflammation of tendon sheaths, as only 33 per cent. of the cases at Bardenheuer's clinic now heal with defective functioning in comparison with the former large proportion of 85 per cent. It does no good but rather harm to induce the artificial hyperemia if ample outlet for the pus is not provided. In 23 of the 34 cases described the lesion healed without impairment of function. He reiterates that with suction or constriction hyperemia we are able to accomplish—with a small incision—what otherwise is realized only by extensive incisions and too often resulting adhesions and disfigurement. Another important indication for hyperemic treatment is when a wound does not seem to be secreting and healing normally. By applying suction the products of the inflammation are drawn outward. This was evidenced especially in a case of phlegmon of the orbit and one of suppuration in the hip joint and in a number of cases of periproctitis in which suction through the fistula hastened healing to a remarkable extent. In this form of suppurative periproctitis the softening of the infiltration must be promoted by cataplasms. He succeeded in healing abscesses containing large amounts of purulent pus in less than two weeks. Furuncles and carbuncles on the face and neck also subsided under puncture and suction treatment. The suction was generally re-enforced by superheated air or electric light baths; this aided in softening the infiltration and the suction completed the cure. In one case the carbuncle was from 10 to 15 cm. in diameter and a complete cure was realized in this way in fifteen days. His experience reaffirms the efficacy of constriction hyperemia as an important aid in tuberculosis, gonorrheal and other joint affections, also for pure fungus without tendency to softening, for all gonorrheal inflammations and in all incipient acute inflammations. Hyperemic treatment is contraindicated, he thinks, in infiltrated and fibrous inflammatory tissue, as in a streptococcus phlegmon; in glandular processes that have not reached the stage of softening; in lymphangitis and lymphadenitis, and in certain cases of osteomyelitis, felon, erysipelas and diabetic phlegmons. Hyperemic treatment, he adds, requires extreme attention from the physician to enable him to recognize retention of pus and to ward off excess of edema and impending adhesions. He gives in conclusion the details of his cases of tendon sheath phlegmons.

116. **Prevention and Treatment of Tuberculous Glandular Processes in the Neck.**—Most gives here a thorough study of the pathologic anatomy and clinical findings in these cases and the indications for and results of operative treatment, with discussion of the preferable technic. The glands frequently become infected through patches of eczema, cracks, sores, etc., especially those near the junction of the mucosa with the skin, and prophylaxis should be based on this fact. The teeth are rarely the portal of entry for tuberculous infection, and pathologic anatomy does not confirm the assumed frequency of infection of the glands in the neck by way of the throat and nose. Infection by these routes does occur, but it is rare. All inflammatory affections of the head and neck, especially in children, require careful treatment, whether they are already tuberculous or not, to prevent tuberculous involvement of the deeper glands. If the glands swell and if there is no urgent haste, general tonic measures and others to promote absorption are in order, but it is not wise to apply iodin locally as it is liable to induce irritation. As the child improves under these general meas-

ures the swollen glands may subside, but if not, a radical operation should follow, bearing in mind that cervical glandular tuberculosis is almost invariably a strictly local process spreading merely from the primary source to the peripheral group of connected glands where the process is kept circumscribed. But as each gland involved is a menace to the entire organism, the aim should be to remove every particle of infected matter. Systematic radical extirpation in general anesthesia should be the rule; from 50 to 60 per cent. of the patients thus treated have been permanently cured to date and this proportion is constantly increasing. He gives illustrations of the connections between different groups of glands in the region, and insists particularly on the importance of operating in such a clean manner that the wound does not become infected with diseased tissue. The low "collar incision" permits ample access while it leaves less disfigurement than other technics.

Fortschritte der Medizin, Leipsic

February, XXVII, No. 4, pp. 145-192

120 Practical Importance of Serodiagnosis of Syphilis. (Praktische Bedeutung der Wassermann'schen Syphilisreaktion.) W. Hancken.
121 Treatment of Pulmonary Tuberculosis with Cinnamic Acid. (Indikationen und Technik der Hetoltherapie.) R. Weissmann. Commenced in No. 3.

Jahrbuch für Kinderheilkunde, Berlin

February, LXIX, No. 2, pp. 129-250

122 *Clinical Importance of Elimination of Phosphates in Urine of Infants. (Die klinische Bedeutung der Phosphorausscheidung im Harn beim Brustkind.) L. Moll.
123 Eosinophiles and Opsonic Index in the Exudative Diathesis. H. F. Helmholz.
124 *Action of Deprivation of Food in the Various Stages of Food Intoxication. (Wirkung des Hungers in den verschiedenen Stadien der Ernährungsstörung.) L. F. Meyer and J. Rosenstern.
125 Infant Mortality in Bavaria and its Causes. (Die geographische Verteilung der Säuglingssterblichkeit im Königreich Bayern in den Jahren 1862-1900 und ihre Ursachen.) W. Hoerner.
126 Tumor on Frenum of Tongue. (Die Riga-Fedesche Krankheit.) M. Abetti.
127 Sarcoma of Adrenal in Infant. (Kongenitales Sarkom der Nebenniere bei einem achttägigen Kinde.) W. P. Shukowsky.

122. **Excretion of Phosphoric Acid in Infants' Urine.**—Moll presents evidence to show that the healthy infant does not excrete phosphoric acid in the urine to any appreciable extent, but that digestive disturbances are at once followed by increased elimination of phosphates. The phosphate content in the urine is thus an early and reliable sign that distinguishes the sick child even before any other signs have attracted attention to the derangement. Moll's research is especially valuable as it includes the findings in enough healthy children to establish a standard. The article is to be continued.

124. **Influence of Deprivation of Food in Various Stages of Food Intoxication.**—Meyer and Rosenstern report from Finkelstein's clinic at Berlin that the effect of putting a child with alimentary intoxication on a starvation diet varies within a wide range according to the stage of the digestive disturbances. During the early stages the effect is beneficial in the nighest degree, but when the child is debilitated from long chronic dyspepsia, the starvation diet may aggravate conditions to such an extent that the child succumbs even to one day of it. They give detailed descriptions with tracings of typical examples of each of these classes of cases. In the second class, the starvation diet—restriction to weak tea for twenty-four hours—was followed by permanently subnormal temperature and slowing of the previously normal pulse. It is important, therefore, before putting the child on the tea diet to ascertain whether it is a healthy child suffering from acute dyspepsia and food intoxication, in which case great benefit will be derived from temporary suspension of food. The pulse of the infant asleep is about 120, the range being from 100 to 130 a minute. When awake, the pulse varies within a very wide range. The temperature at 6 a. m. and at 4 p. m. gives a nearly horizontal tracing, varying only from 36.8 to 37.2 C. (98 to 99 F.) in health. The chronically ailing infant, on the other hand, is inclined to subnormal temperature from 36 to 36.8 C. (96.8 to 98 F.) and pulse rate of from 66 to 100, averaging only 86 or 90. If such a child is restricted to weak tea for a day the temperature and pulse drop still lower and the aggravation of the condition may prove fatal in these cases in which the preceding protracted dyspeptic disturbances have modified the general condition with resulting functional insufficiency of the tissues.

Medizinische Klinik, Berlin

February 14, V, No. 7, pp. 236-268

128 Treatment of Affections of Cornea. (Therapie der Hornhautaffektionen.) Wiedemann.
129 Relations between Female Generative Processes and Cholelithiasis. J. Hofbauer.
130 *Serodiagnosis of Syphilis during Years Immediately Following Infection. (Bedeutung der Wassermannschen Reaktion bei der Syphilis während der ersten der Infektion folgenden Jahre.) F. Blumenthal and Roscher.
131 *Symptoms Suggesting Appendicitis during Lobar Pneumonia. H. Bennecke.
132 Mechanical Regulation of Heart as Method of Exercising it in Heart Disease. (Uebungstherapie bei Herzkranken.) M. Fisch.
133 Choked Disc. (Zur Theorie der Stauungspapille.) W. Thorner.
134 Cultivation of Serum-fast Strains of Trypanosomes. (Herstellung von serumfesten Trypanosomenstämmen.) M. Jacoby.

130. **Serodiagnosis of Syphilis Soon After Infection.**—Blumenthal and Roscher report experience with the Wassermann test applied to 231 patients, 207 of whom presented signs of syphilis, while 4 of the others were "suspects." They found that the reaction is always negative until the sixth or eighth week and then it gradually increases in intensity until the course of the disease is modified by mercurial treatment. During the active secondary stage the reaction was invariably positive. In the few cases in which the first test was negative, a repetition gave strongly positive findings. The influence of mercurial treatment was evident but not always distinct; even especially energetic measures did not always succeed in abolishing the reaction. The duration of the courses of treatment should not be determined by the findings of this test. In some cases the findings, negative at first, became positive under mercurial treatment. They do not think that the reaction during the first year following the infection has any significance for the prognosis. The varying findings in one and the same patient, the occurrence of new manifestations after negative findings, and the development of positive findings when treatment was commenced during a latent phase—all this shows the inadvisability of omitting or suspending treatment on the basis of a negative response to the test.

131. **Appendicitic Symptoms in Pneumonia.**—Bennecke states that in two of the twenty-one cases of lobar pneumonia with symptoms suggesting appendicitis, an operation was undertaken for the supposed appendicitis. His experience confirms the strange fact that pneumonia in the right upper lobe is most liable to be accompanied by these peritoneal and abdominal symptoms. These twenty-one cases were encountered in 99 cases of lobar pneumonia in the last few years. In only eight of the twenty-one was the course of the pneumonia of the ordinary type; in the others it was comparatively brief or otherwise atypical.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XIX, No. 4, pp. 553-736. Last indexed Jan. 2, p. 83

135 Tuberculoid Changes in Peripheral Nerves in Lepra nervorum. H. Shiota.
136 Sensibility of Abdominal Organs. (Sensibilität der Bauchorgane.) L. Kast and S. J. Meltzer (New York).
137 Lesions in Pancreas and Liver in Relation to the Chromaffine System. S. Kostlivy.
138 Necrosis of the Pancreas and Chronic Pancreatitis. O. Hess.
139 *Experimental Research on Influence of Trauma on the Heart. (Herz und Trauma.) Külbs.
140 *Foreign Body Pseudotuberculosis of Peritoneum. (Zur Fremdkörpertuberkulose des Peritoneums.) M. Brandes.
141 *Case of Inflammatory Thrombosis of almost Entire Peripheral Venous System. ("Springende Thrombosen"; "Thrombophlebitis migrans.") K. Försterling.

139. **The Heart and Trauma.**—Külbs has been making an experimental study of the importance of trauma in the development of heart affections, and summarizes the results in the statements that extensive injury of the heart almost invariably followed slight contusion of the thorax, even when the skin and thorax wall showed no special changes. The injury induced hemorrhages, most frequently in the valve tissue, but sometimes in the myocardium and pericardium. The hemorrhage in the valves was generally reabsorbed; in the muscle it was followed by production of connective tissue. The

hemorrhage at the base of the valves sometimes extended far into the muscle and left a material defect. It was remarkable that even when gross anatomic changes were found at autopsy, auscultation and the pulse frequently gave no hint of cardiac insufficiency during life. The elasticity of the thorax is evidently an important factor in determining the extent of the injury from the trauma. His experiments were made on thirty-four dogs; the details are given in tabulated form for comparison.

140. **Foreign Body Pseudotuberculosis of the Peritoneum.**—Brandes refers to the granulation tissue which forms around small foreign bodies finding their way into the peritoneum, the nodules thus formed deceptively simulating true tuberculosis. He reviews the history of this pseudotuberculosis and reports a case in which a man of 43 was operated on for perforation of a gastric ulcer. The abdominal cavity was mechanically cleansed of remains of food, and recovery was uneventful for three weeks. Then signs of gangrene of the lung developed, proving fatal in six weeks. The lung trouble was probably the result of particles of food getting into the air passages, as the patient had suffered from persistent hiccough for several days. Autopsy revealed a number of nodules in the peritoneum suggesting tuberculosis, but proving to be the walling off of particles of food left behind at the operation. The patient had complained of digestive disturbances for a few months and the perforation occurred immediately after a hearty meal of bean soup. This case is the fourth on record of "foreign body tuberculosis" after perforation of a gastric ulcer in adults. In this case the pseudotubercles were scattered over the entire abdominal cavity. The facts observed demonstrate that fatal peritonitis is not the inevitable outcome of perforation of the stomach, even when full of food. An early laparotomy may save the patient, or there may be a spontaneous cure by walling off of the particles of food by a natural formation of nodules which may simulate the lesions of tuberculosis or carcinosis. In conclusion, Brandes refers to a recently reported Russian case in which the abdominal cavity was found studded with subserous "tubercles" fourteen months after a firearm injury of the intestine. Each tubercle contained remains of vegetable matter encircled by giant and other cells, mostly fibroblasts and polyblasts—a typical example of this spontaneous encapsulation of particles of food escaping from the intestine into the peritoneum after the bullet wound. Recurrence of abdominal pain led to a laparotomy fourteen months after the primary injury, when the microscope was the only means of excluding tuberculous peritonitis.

141. **Multiple Thrombosis.**—Fösterling's patient was a young fireman of 24, previously healthy and robust until suddenly affected with thrombosis in the veins of both calves, then of the arms and later in turn of almost the entire peripheral venous system. In the course of these disturbances signs of pyloric stenosis became evident and relief was obtained by a gastroenterostomy, but the stomach trouble proved to be of malignant nature and the young man succumbed to metastasis in less than a year from the first symptoms of thrombosis. Fösterling compares the case with others of multiple thrombophlebitis in the literature. In only three cases did the extent of the thrombosis compare with his case, and none equalled it. His patient's blood was apparently normal in every respect, but the malignant disease must have existed prior to the first symptoms in the veins, and it is possible that the walls of the veins may have been exceptionally susceptible to the poisons generated by the cancer.

Münchener medizinische Wochenschrift

February 16, LVI, No. 7, pp. 321-376

142 *What is to be Learned from Clinical Measurement of Blood Pressure? (Was erfahren wir durch unsere klinischen Blutdruckmessungen beim Menschen?) F. Moritz.
143 *Distribution of Trichinæ. (Verbreitungsart der Trichinelle.) C. Stäubli.
144 *Practical Importance of Serodiagnosis of Syphilis for Surgical Affections. (Bedeutung der Wassermannschen Serum-Reaktion für die Differential-Diagnose der chirurgischen Syphilis.) W. Baetzner.
145 Eleven Cases of Congenital Dislocation of Hip Joint Hard to Cure. (Demonstration schwierig zur Heilung gebrachter Fälle von angeborener Hüftverrenkung.) P. Bade.
146 *Affections of Musculature of Bladder. (Erkrankungen der Harnblasenmuskulatur.) P. Asch.
147 *Fat-Zwieback Test Breakfast for Estimation of Motor Functioning of Stomach. (Die Strauss-Levasche Motilitätsprüfung des Magens mittels des Fettzwiebackfrühstücks.) E. Schenck, F. Tecklenburg and Dappers.

142. **Practical Value of Clinical Measurements of the Blood Pressure.**—Moritz is a pioneer in this line, and here states that the limits of solid knowledge are comparatively narrow, but that within these limits the measurement of the blood pressure has proved an important aid for diagnosis and for prophylaxis and treatment.

143. **Trichinosis.**—Stäubli has found that the trichina is comparatively frequent in rats, but that it soon kills them so that swine are the main source of infection. He is convinced that trichinosis is more common than is generally believed; but that it passes unrecognized, the patients complaining only of vague rheumatic disturbances.

144. **Serodiagnosis of Surgical Syphilis.**—Baetzner reports 25 cases which sustain the practical differential value of the serum reaction. It is disappointing in that it does not locate the lesion in any special organ, while at the same time negative findings are sometimes encountered in unmistakable syphilis.

146. **Affections of the Musculature of the Bladder.**—Asch has encountered eleven cases of enlarged trabeculæ in the bladder which there was nothing to explain. Seven of the patients were women, and the symptoms were frequent tenesmus, occasional pain and dribbling of urine. He ascribes the trouble to atrophy of part of the bladder musculature, the trabeculæ becoming enlarged as a compensating hypertrophy. He has cured the subjective symptoms in these cases by a kind of massage, stimulating the musculature to contract by injecting a hot solution of boric acid into the bladder under high pressure.

147. **The Fat Zwieback Test Breakfast for Estimating the Motor Functioning of the Stomach.**—The principle of the Strauss and Leva fat zwieback breakfast is to test the motor activity of the stomach by ingestion of a given amount of a substance which the stomach merely passes along and does not attempt to digest. The substance ingested must also resist fermentation processes. These conditions are realized with a given amount of zwieback with a rather large proportion of butter fat. The amount remaining in the stomach an hour later shows the condition of the motor function. The test was applied in 34 cases at Treupel's clinic at Frankfurt, the findings proving very instructive. This test has the further advantage that both the chemical and the motor functioning are determined at the same time with only the one simple test. The exact technic was described in the *Zeitschrift für klinische Medicin*, Berlin, 1908, lxv, page 61.

Wiener klinische Wochenschrift

February 18, XXII, No. 7, pp. 221-256

148 Present Conception of Scrofula. (Was nennen wir Skrofulose?) T. Escherich.
149 Hepatotoxin. G. Joannovics.
150 Reactivation of Hemolytic Immune Serum by Solutions of Hemotoxins and Serums from Cold-blooded Animals. (Reaktivierung von hämolytischem Immunserum durch Lösungen von Hämotoxinen und durch Kaltblutersera.) K. Landsteiner and J. Fürth.
151 Incarcerated Hernia in Ileocecal Recess. (Hernia recessus ileocoecalis incarcerata.) P. Preindlsberger.
152 Intramuscular Inguinal Hernia. V. Schiller.

Zeitschrift für klinische Medizin, Berlin

LXVII, No. 4, pp. 253-343. Last indexed Jan. 30, p. 427

153 *Influence of Temperature of Body on Sugar Content of Blood. (Einfluss der Körpertemperatur auf den Zuckergehalt des Blutes.) H. Senator.
154 Amebic Dysentery. Huber.
155 *Primary Neoplasms of the Heart. (Klinik der primären Neubildungen des Herzens.) R. Link.
156 Metabolism of Phosphoric Acid and Lime in Healthy Adults. (Phosphorsäure- und Kalkstoffwechsel beim erwachsenen, gesunden Menschen.) F. Oeri.
157 Bence-Jones' Albumosuria. A. v.Decastello.

153. **Influence of Temperature of Body on Sugar Content of Blood.**—Senator states that the proportion of sugar in the blood became very much increased in rabbits when they were kept in a hot place—once at a temperature of 109 F. The

proportion of sugar in the blood of the carotid was 24, 32, and 156 per cent. higher than in normal rabbits. There was also an increase, ranging from 8 to 30 per cent., in rabbits after puncture of a heat center. His experiences have fully established, for rabbits at least, that raising the temperature of the body is followed by an increased proportion of sugar in the circulating blood. He discusses whether the sugar is derived from the glycogen already on hand or from increased breaking down of albumin. In infectious febrile conditions the higher temperature and increased destruction of albumin have a tendency to increase the proportion of sugar in the blood, but, on the other hand, the action of the bacteria on the glycogen and sugar content and the patient's inanition would have an opposite tendency. He comments, in conclusion, on the fact that the urine may be free from sugar even when the proportion in the blood is abnormally high, possibly up to 2.8 per thousand. This is probably due to the lesser permeability of the kidneys, the result of the febrile process. It is similar to the retention of chlorids and lime salts in certain febrile affections.

155. **Primary Neoplasms in the Heart.**—Link gives an illustrated description of a spindle-celled sarcoma, involving both auricles, in a forester of 23 the most extensive case of the kind yet published. He compares it with 2 somewhat similar cases on record commenting on the slight clinical manifestations with such extensive destruction of the heart tissue. He also summarizes from the literature 11 cases of pedunculated tumors, generally growing from the wall of the septum into the left auricle and protruding into the ventricle, all fibromas or myxomas. The symptoms were those of mitral insufficiency or stenosis. In 2 other cases the primary tumor was located in the right ventricle; the patients were men of 32 and 37 and the symptoms were those of angina pectoris, with sudden death; in a third similar case the symptoms merely suggested increasing cardiac insufficiency. A fourth group includes 2 cases of carcinoma in both ventricles or in the aortic valve. An important sign of cancer in such cases is a hemorrhagic pericardial fluid if tuberculosis, scorbutus and trauma can be excluded. Link does not include in his review any cases of gumma of the heart or secondary tumors, but has succeeded in compiling a table of 91 cases of primary tumors. The list includes 10 in the right and 24 in the left auricle, 14 in the right and 8 in the left ventricle, 16 in valves, 3 in both auricles, 2 in both ventricles, 2 involving the entire right and 2 the entire left side of the heart, with 2 each in the septum between the auricles and the ventricles. Only 23 of the cases listed have more than pathologic-anatomic interest, as clinical data are lacking in the rest. The diagnosis of carcinoma is given in several cases in infants and older children, but with a query. A spindle-celled sarcoma was found on the aortic valve in a girl of 7, who had died suddenly. All ages, from birth to 81, are represented in the list.

Zentralblatt für Chirurgie, Leipsic

February 20, XXXVI, No. 8, pp. 249-288

158 Modification of Bassini Operation, especially for Large Hernias. A. Caminiti.
159 Implantation of Hepatic Duct in Jejunum. (Neue Operation an den Gallenwegen.) R. Dahl.

Zentralblatt für Gynäkologie, Leipsic

February 20, XXXIII, No. 8, pp. 265-296

160 Evidence against Placental Origin of Eclampsia. Lichtenstein.
161 *Extraperitoneal Cesarean Section. (Extraperitonealer Kaiserschnitt.) W. Latzko.
162 Catheter for Rinsing the Bladder. (Neu konstruierter Blasenspülkatheter.) S. Higuchi.

161. **Extraperitoneal Cesarean Section.**—Latzko's technic is so simple that in one of the three cases reported the whole operation was completed in 20 minutes. The principal advantages are that it is applicable to infected cases and that the operation proceeds with greater ease the longer labor has lasted, so that the obstetrician can calmly wait to give Nature every possible chance to complete the delivery unassisted. The bladder is partly filled and, after the incision on the median line, the bladder is drawn towards the right—the bladder being always naturally pushed rather to this side toward the close of pregnancy. It is easily separated from the enlarged cervix. The reflected portion of the peritoneum is pushed upward and the bulging cervix is easily incised. His technic was applied April 26, 1908, and reported May 8. It has the advantage which is possessed by both the Frank and Sellheim I methods, he says, while in addition it excludes all the danger of injury of the peritoneum.

Riforma Medica, Naples

February 8, XXV, No. 6, pp. 141-168

163 Tumors of the Base of the Brain. (I tumori della base dell'encefalo.) G. Rummo.
164 Relations between Kidneys and Adrenals. (Reni e capsule surrenali.) A. Baduel.

February 15, No. 7, pp. 169-196

165 Tumors of Base of Brain. (I tumori della base dell'encefalo.) G. Rummo.
166 *Paratyphoid Infection. (Febbricole da bacillo paratifoso.) L. Ferrannini. Commenced in No. 6.

166. **Paratyphoid Infection.**—Ferrannini concludes his long experimental and clinical study of this subject with the statement that paratyphoid infection is not always so mild as generally assumed. In about 200 cases on record there were 12 deaths, but of dubious explanation in 5 instances. His experience has shown that paratyphoid fever may persist for months with a pertinacity recalling Malta fever. On account of the lesser involvement of the digestive tract it compares favorably with typhoid. It is unnecessary to restrict the patient to a liquid diet, and this is the principal reason why it is so important to differentiate it from typhoid. The prophylaxis should be the same as for typhoid, with special care to refrain from the use of suspicious meat. The lingering fevers are of various etiology and differentiation is possible only with bacteriologic examination and serum reaction. The fever may be the work of the Bruce micrococcus, the paratyphoid or typhoid or colon bacillus or of the malaria germ or tubercle bacillus or of some still other infection. The varied clinical picture is the result of association of different infections, a bacterial symbiosis which modifies the differential characteristics of the single infections.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

DYKE'S COMPLETE COURSE OF AUTOMOBILE ENGINEERING. Consisting of one cloth bound book of 325 pages, with 220 illustrations, entitled DYKE'S TROUBLES, REMEDIES AND REPAIRS OF THE AUTO AND GASOLINE ENGINE. Also 24 paper pamphlets detailing the lessons. Also working models of four-cycle engine and magneto. Price, $10.00. St. Louis: Dyke's Correspondence School of Motoring, 801 Bank of Commerce Bldg.

PRACTICAL DIETETICS With Reference to Diet in Disease. By Alida Frances Pattee, Graduate Department of Household Arts, State Normal School, Framingham, Mass. Fifth Edition. Cloth. Pp. 358. Price, $1. Mount Vernon, N. Y.: A. F. Pattee.

TUBERCULOSIS OF THE NOSE AND THROAT. By Lorenzo B. Lockard, M.D., Laryngologist and Rhinologist to the Jewish Consumptives' Relief Society Sanatorium. Cloth. Pp. 368, with illustrations. Price, $5. St. Louis: C. V. Mosby Co., 1909.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Prof. Dr. Phil. et Med. Carl Oppenheimer, Berlin. Installments 11, 12 and 13. Paper. Price, 5 marks each. Jena: Verlag von Gustav Fischer, 1909.

APPENDICITIS and Other Diseases of the Vermiform Appendix. By Howard A. Kelly, M.D. Cloth. Pp. 502, with illustrations. Price, $6. Philadelphia: J. B. Lippincott Co.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. September, 1908. Vol. xxviii. Twenty-ninth Annual Meeting Held at Ithaca, N. Y., June, 1906. Paper. Pp. 236.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Fourth Annual Meeting, Chicago, June 5-6, 1908. Paper. Pp. 352.

REPORT OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION. Fifty-fifth Report on the Public Schools of New Hampshire. Paper. Pp. 656, with illustrations.

SEMI-ANNUAL BULLETIN OF THE KANSAS STATE CHARITABLE INSTITUTIONS Under the Board of Control. Vol. 1. November, 1908. No. 2. Paper. Pp. 33.

THE CENTENNIAL CELEBRATION OF THE FOUNDATION OF THE UNIVERSITY OF MARYLAND, 1907. Memorial volume. Cloth. Pp. 267, with illustrations.

THIRTY-THIRD ANNUAL REPORT OF THE MANAGERS AND OFFICERS OF THE NEW JERSEY STATE HOSPITAL at Morris Plains. 1908. Paper. Pp. 61.

REPORT OF DEPENDENCY AND CRIMES COMMISSION [of the State of New Jersey]. Paper. Pp. 23.